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DENDROBIUM FORMOSUM.

(*See page* 360).

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THE

ORCHID REVIEW

An Illustrated Monthly Journal

DEVOTED TO ORCHIDOLOGY

VOLUME XV

1907

London:
MARSHALL BROTHERS, LTD., KESWICK HOUSE, PATERNOSTER ROW, E.C

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M.B. Bot. Garden
1908

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VOL. XV.] JANUARY, 1907. [No. 169.

THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *JANUARY*, 1907. [No. 169.

EVENTS OF 1906.

THE year just closed has been a notable one for Orchidology, though it has not been marked by such a sensational event as the rediscovery of the long-lost Cypripedium or Paphiopedilum Fairrieanum, for which 1905 will long be famous. In addition to the Hybridisation Conference, in which Orchids occupied a prominent place, there was the Special Diploma Competition of the Royal Horticultural Society, extending throughout the year, the results of which have been reported in our pages month by month. Evidence of the growing popularity of these beautiful plants is also seen in the establishment of an Orchid Society in Germany, which has begun to publish a monthly work under the title *Orchis*, of which several numbers have been issued.

EXHIBITIONS.

The Orchid exhibits at the fortnightly meetings of the R.H.S. have been above the average, and, we believe, have not been equalled in any previous year, either in extent or excellence. The Society's Gold Medal has been awarded on thirteen different occasions, while four Lindley Medals and fifteen Cultural Commendations have been given. About forty First-class Certificates and 110 Awards of Merit have been issued, besides numerous Botanical Certificates, given to plants of special interest, though not showy enough for general culture. The Temple Show maintained its high standard of excellence, and the Summer Show, which this time returned to Holland House, Kensington, also witnessed a very fine display. The meetings of the Manchester and North of England Orchid Society have also been very successful, and a large number of Awards have been made. The Veitchian Cup this year practically went to Orchids, being awarded to Messrs. Sander and Sons for their magnificent group of Orchids and new and rare plants shown at the Temple Show.

NOVELTIES.

A good many novelties have been described, though the majority appeared at an earlier date, and a good many are chiefly of botanical interest. Cœlogyne Mooreana, however, is a striking species from Annam,

which has gained a First-class Certificatc from the R.H.S. And the appearance of two new Cattleyas, C. Jenmanii and C. Forgetiana, is decidedly interesting. Oncidium Claesii is a very handsome species, and we hope will prove as amenable to cultivation as O. macranthum, which belongs to the same group. O. × Stanleyi, a supposed natural hybrid, is also very handsome. Saccolabium rubescens and Renanthera annamensis are two very pretty introductions from Annam, which country promises to yield a considerable number of novelties. Pleione yunnanensis (figured at page 81) is a handsome thing, previously described from dried specimens, but now introduced to cultivation, and similar remarks apply to Cymbidium insigne, Cypripedium tibeticum, and Disa erubescens.

HYBRIDS.

Hybrids have been very numerous, and include two new Odontiodas, O. heatonensis and O. Bohnhoffiæ, Sophrolælia Phroso, Brassocattleyas Mrs. Francis Wellesley, Cordelia, Digbyano-Forbesii, The Baron, Erotion, Pyrrha, and Madame Hye, Brassolælias fladosa and Lelieuxii, Brasso-epidendrum stamfordiense, Brassocattlælia balarucensis, elegans-Digbyana and Tring Park Hybrid, and numerous additions to familiar genera which it would take too long to repeat here, though we must make an exception in the case of

ODONTOGLOSSUM.

The hybrids of this popular genus are now rapidly increasing, and the past year has seen some notable additions, as O. × Fowlerianum, × Elaine, × Eurydice, × Urania, × W. H. Hatcher, × Terpsichore, × ashlandense, × Una, and the interesting secondary hybrid O. × Stewartianum. O. × Hudsoni is an interesting natural hybrid from O. gloriosum and Hunne-wellianum. M. Ch. Vuylsteke again staged a fine group of seedlings at the Temple Show, and eight of the more striking were figured in our August issue (pp. 240, 241). The handsome O. × Thompsonianum has also been raised again, while O. platychilum, long known from a single plant, has at last been introduced in quantity. A few blotched "crispums" of artificial origin have also appeared, and augur well for future developments.

CERTIFICATED ORCHIDS,

as already indicated, have been exceptionally numerous, and an analysis of those which gained a First-class Certificate from the R.H.S. during the year shows thirteen Cattleyas, of which C. Mossiæ, C. labiata and C. × Fabia claim two each, eight Cypripediums, five Odontoglossums, four Cymbidiums, and two Brassocattleyas, with Aërides Houlletianum, Fowler's var., Arachnanthe annamensis, Bulbophyllum virescens, Cœlogyne Mooreana, "Lælio-Brasso-Cattleya Veitchii" (which must be amended to Brassocatlælia Veitchii), Lissochilus Horsfallii—a very handsome reintro-duction—Sobralia Holfordi, and Sophrocattleya warnhamensis, var. Cerise.

OTHER EVENTS.

Several other interesting events of the year may be mentioned in passing. The discovery of Goodyera repens in Norfolk and the rediscovery of Cypripedium Calceolus in Yorkshire have been recorded in our pages, the Mendelian "Laws" of Inheritance, and Rules of Nomenclature have been discussed, as well as the question of Fungus Co-operation in Orchid roots—and, by the way, has also been illustrated in our pages. A good many of the specially interesting Orchids of the year have also been illustrated, but considerations of space prevent us enumerating them, and they are given in detail at page 384 of our last volume.

LOSSES DURING THE YEAR.

It has been our melancholy duty to record the decease of several well-known and highly-respected Orchidists, Count Kerchove, H. M. Pollett, J. E. Vanner, Reginald Young, and G. W. Law-Schofield, while that of Prof. Pfitzer is recorded in our present issue, but their work is known, and in several cases it would be no exaggeration to say that their names will be remembered as long as Orchidology lasts.

So much for the past year, which has been one of marked progress. And the future is full of promise. Orchids were never more popular than at present, and the hybridist is abroad, and what he may have in store for us can be awaited with confidence.

ONCIDIUM WALUEWA.

A NOTE respecting the history of this pretty little Orchid, which was exhibited by H. T. Pitt, Esq., at the R.H.S. Scientific Committee meeting on November 20th last, may be interesting. It was originally figured and described by Regel as a new genus, in 1891, under the name of Waluewa pulchella (*Gartenflora*, xl. p. 80, t. 1341, fig. 1), being dedicated to Count P. A. Walujew. It is a native of the Province of Minas Geraes, Brazil, and was sent by Herr Lietz to the St. Petersburg Botanic Garden, where it flowered. It was described as nearly allied to Gomesa. A comparison of characters, however, shows that it is an Oncidium of the pubes group, and as there was an Oncidium pulchellum, Hook., a native of the West Indies (*Bot. Mag.* t. 2773), the generic name had to be utilised, and the species was called Oncidium Waluewa (Rolfe in *Kew Hand-List Orch.* ed. 2, p. 167). It is a very dwarf species, scarcely three inches high, and produces dwarf racemes of whitish flowers, prettily barred with pink on the petals, and spotted on the lip. It belongs to Lindley's group Tetrapetala micropetala, and is nearly allied to O. pubes, Lindl., though much dwarfer in habit. Prof. Cogniaux has recently referred it to Leiochilus, as L. pulchellus (*Mart. Fl. Bras.* iii. pt. 6, p. 450, t. 94, fig. 11).

R. A. ROLFE.

ORCHID HOUSES AT CHILLINGHAM CASTLE, NORTHUMBERLAND.

THE annexed illustration represents the fine range of Orchid houses erected some time ago for the Right Hon. the Earl of Tankerville, at Chillingham Castle, Northumberland, of which we have recently learned a few particulars from Mr. Hunter. The range practically consists of nine houses, there being a corridor 120 feet in length, attached to a north wall, and divided into three compartments, and six other houses, each thirty-five feet long, extending from the corridor at right angles, and running north and south. These comprise three Odontoglossum houses, a Cattleya house, a Cypripedium house, and a seedling house, while the three divisions of the corridor are utilised, one for Dendrobiums and Lælias, one for Cymbidiums tand Miltonias, and the third for a resting house during the winter. Five of the houses, as will be seen, are span-roofed, and are fifteen feet wide, the

Fig. 1. ORCHID HOUSES AT CHILLINGHAM CASTLE.

glass roof resting directly on the brick walls, which are four feet high and furnished with shutters in the sides and end. Thus all the light comes from the glass roof, including the ends above the walls, and Mr. Hunter states that he finds Orchids do much better in houses of this kind. These houses have side and centre stages, the former two feet nine inches wide, and the latter five feet, and arranged in steps, so that the plants fall according to the slope of the roof. The stages are of teak, resting on an iron framework. There is a bottom stage, covered with a layer of coke, while the upper stage is made of teak rails, fixed two inches apart, so as to permit of a free circulation of air. There are five rows of hot-water pipes in each house, these branching from a single pipe running throughout the corridor, and all acting as flows and returns. There are two very powerful boilers, called the "Ideal," but only one is used at a time. They are worked alternately for a month at a time, and cleaned before being started again.

The houses are constructed upon thoroughly up-to-date principles, and with an enthusiastic owner and such excellent appliances we may anticipate that the collection under Mr. Hunter's charge will occupy a very important position in the near future.

We omitted to mention that the houses were erected by Messrs. Wm. Richardson & Co., of Darlington.

VARIATION IN ODONTOGLOSSUM CRISPUM.

AN important article by M. A. Poirier appears under the above title in a recent issue of the *Gardener's Chronicle* (1906, ii. pp. 404, 405), which we summarise here, as it is in reply to one by Mr. de Barri Crawshay, which was reproduced in these pages (xiv. pp. 193-196).

Writing from Velez, Colombia, M. Poirier remarks that the chief impression left upon the mind of the reader who knows the habitat of Odontoglossum crispum is that to follow the instructions literally would be to leave the finer varieties and purchase the poorer ones. And the explanation that the more numerous varieties of recent years is due to the abundance in the new districts of O. Hunnewellianum and O. triumphans, which are the equivalents of O. luteopurpureum and O. gloriosum in the Pacho district, is too erroneous to be passed over.

O. luteopurpureum, he remarks, is strictly limited to the Cordillera of the Suma Paz, or to the south (Fusagasuga), while O. Hunnewellianum and O. × Adrianæ come from the Velez region, and every grower of experience would refuse collections of O. crispum in which luteopurpureum is seen, as its presence would be an indisputable proof that the crispums will be pure Alexandræ, the form with small, starry-like flowers from the Fusagasuga region. True, large consignments of the bad Fusagasuga type have been sent to Europe as being the finer type from the Velez region, but the explanation is simple. The Fusagasuga plants are found abundantly over the whole region, and can be obtained cheaply. They are charming in appearance, and are admired for their vigour, and their long, conical bulbs, flattened at the neck. They are transported to Pacho and to Chiquinquira, and sold to ignorant collectors at a good price. The trick is highly successful; native dealers are usually unscrupulous, and find that they have an easy source of income, and the satisfaction of deceiving the stranger who relies only on their word. The writer himself, about three years ago, saw about twenty cases of Fusagasuga crispum on the way to Chiquinquira. The fact of these inferior types being mixed with a large proportion of the good type from the Velez region explains the large proportion of star-shaped flowers found in collections of crispum. There is, he remarks, no luteopurpureum in the Velez region.

The writer is rather puzzled by Mr. Crawshay's remarks about the "districts," San Cayetano, Pacho, La Vega, Chiquinquira, Velez, &c., and the different types found there, and he remarks :—"I am familiar with and have traversed these regions, and I would state :—1. That in all the localities mentioned except Chiquinquira the sugar-cane thrives, thus indicating a very different climate to that required by O. crispum. 2. That there has never yet been seen one crispum in either of these localities. These 'districts' are but small towns or villages, where, according to their wont, collectors apply for the special commodity which they are seeking. Plants are brought to them, which they have but to count over and purchase. This is done by Indians, who range the mountains, upon which the collectors themselves never set foot. These travellers then, finding the 'posadas' more or less comfortable, the price of the plants more or less high, materials for their packing cases more or less easily procurable, and sometimes governed by their own wishes only, move about, and settle successively at Pacho, La Vega, &c. The favourite districts now are Velez, Bolivar, and Jesus-Maria, new 'districts,' but not more new than others, as a glance at a map shows that all are adjacent to a small part of the Cordillera, whence the true crispums have always been procured. In this part of the Cordillera, and not north, south, east, or west of it, crispum is found. The centre of the region of crispum is, to be exact, Sucre Viejo, formerly called La Granja by the natives. This is a hamlet of from 12 to 15 huts, at an altitude of about 2,500 m., and for years it has been the starting point for explorations in search of crispum." This the writer terms the one and only "district" for crispum, and he asks why Mr. Crawshay did not mention the districts of Zipaquira, Bogota, Tacatativa, and Aqua Larga—localities whence for some years collectors have quietly waited for the plants brought from Sucre Viejo and the neighbourhood ?

Concerning the so-called "Pacho type," M. Poirier remarks that the search for O. crispum began towards the south of the region just described. "Then, gradually, exploration was pushed northward, and some good varieties began to appear. At that time Pacho was the meeting-place of the collectors ; the Indians or natives came there to sell these varieties, and often to Bogota itself. These intermediaries were careful to conceal from the collector the exact habitat of the plant. Hence the origin of the fine types 'from Pacho,' &c. Collectors, thus mistaken, declare, in all good faith, that a certain variety is from Pacho or elsewhere. But if they went over these mountains they would at once perceive that the plants all came from one relatively small district around Sucre Viejo. This is the only region yielding, of late years, those fine varieties now so much affected. Last year, only, we witnessed the purchase of many admirable varieties by a collector for one of the largest trade growers in England. These varieties

came, it may safely be affirmed, from the mountains named Pena Bonita, Pelycadero, La Granja (Sucre Viego), Campo hermoso, &c., a large tract that has belonged since 1898 to the Adonado Rubber Co., Ltd." The mean temperature of these mountains is given as follows (and is said to be persistent throughout the year) :—

Altitude.			Night.	Day (in shade).
At 2000 métres		(Cold temperate zone),	10°C. (50°F.) to	20C. (68°F.).
,, 2400	,,	(Cold *zone*),	8°C. (46°F.) ,,	18°C. (64°F.).
,, 2800	,,	(,, ,,),	5°C. (41°F.) ,,	15°C. (59°F.).
,, 3000	,,	(Very cold *zone*),	0°C. (32°F.). ,,	12°C. (54°F.).

"It is towards an altitude of 2400 to 2500 métres that the finest varieties are usually found. The climate is fairly mild, and insects are numerous. Of late years crispum has been sent from the mountains of the cold and very cold *zones*, where there are no insects. This accounts for a scarcity of varieties and a scarcity of fecundated flowers. Last year, on the contrary, a somewhat large quantity of fertilised flowers was found among the plants from the cold temperate mountains, a considerable number being of the finer varieties. At an altitude of about 2400 métres O. Adrianæ and O. Hunnewellianum are found."

The author makes some remarks about hybridisation, admitting the possibility that some of the spotted forms may be hybrids between crispum and Adrianæ, and he alludes to Andersonianum, Coradinei and Ruckerianum as species, though they are clearly natural hybrids, but this point may be passed over. The author concludes by saying that it is the Velez region "which has yielded, and will yield, perhaps for a long time to come, the best type of O. crispum," including many specimens of roseum, and he finally remarks :—"I beg M. de Barri Crawshay to believe that I do not in the least impugn his good faith, but it is necessary, nevertheless, to explain the true state of the case.

"CYPRIPEDIUM RECORD.—The Earl of Tankerville, at Chillingham Castle, has succeeded in flowering a Cypripedium, the result of crossing C. × Leeanum Clinkaberryanum and C. insigne Harefield Hall, in eighteen months from seeds. Mr. Hunter, the head gardener at Chillingham Castle, sends the record . 'Sown May, 1905 ; flowered, November, 1906.' and states that there can be no doubt about the identity of the fine hybrid just flowered, as but few were sown before that date, and none which could be confounded with the cross in question. Another plant of the same batch is about to flower, and it will probably be shown at a meeting of the Royal Horticultural Society. The first to flower would have been shown but for the bloom sustaining an accident."—*Gard. Chron.* 1906, ii. p. 385.

LÆLIO-CATTLEYA PHRYNE.

LÆLIO-cattleya Phryne is a very beautiful hybrid which was originally raised by Messrs. James Veitch & Sons from Cattleya Warscewiczii ♀ and Lælia xanthina ♂, being exhibited in August, 1899 (*O.R.* vii. p. 287). It has since been raised in the collection of Jeremiah Colman Esq., Gatton Park, Reigate, according to Mr. Bound's record, from the reverse cross. The latter has been photographed by Mr. Bound, to whom we are indebted

Fig. 2. LÆLIO-CATTLEYA PHRYNE.

for the photograph here reproduced, which represents the flower natural size. The hybrid most resembles the Lælia parent, both in shape and colour, though the flower is larger and the petals are broader. The prevailing colour may be described as pale cream yellow, with some deeper yellow in the throat, and the front of the lip prettily suffused with rose-pink.

CALENDAR OF OPERATIONS FOR JANUARY.

By W. P. BOUND, Gatton Park, Reigate.

ATMOSPHERE.—To maintain Orchids in a healthy state during the short dull days of winter, it is essential that all the houses should be well charged with pure air daily, and to bring this about it is necessary to have a good system of bottom ventilation, so that the air admitted can pass over the hot water pipes before coming in contact with the plants. The Cool or Odontoglossum house is generally well looked after in this respect, but it is equally necessary for the well-being of the plants in the warmer houses to have a sweet atmosphere at all times. I prefer to fire more rather than not admit any fresh air. There are not many days in the year when it is not possible to have the bottom ventilators open, if only for an hour or two, but generally speaking they should only be closed entirely during very severe weather, or when the wind is blowing from the north or east, and then sufficient fresh air finds its way into most structures.

TEMPERATURES.—In addition to a sweet atmosphere, it is also well for the inmates of the houses to keep quiet temperatures, but to lay down any hard and fast rules as to what this or that house should be in the evening or morning is misleading, for what is correct one day is quite wrong the next, and the external conditions must be observed hour by hour and day by day. During weather when the outside temperature falls as low as say 20°, the morning temperature of the Stove Orchid house should be 60°, Cattleya House, 58°; Intermediate House, 56°, and Odontoglossum House, 48°. Now take the temperature outside at 40°, and then the Stove should be 64°, Cattleya, 60°; Intermediate, 58°, and Odontoglossum, 52°, the first thing in the morning. A slight guide can be taken from these figures, bearing in mind that when we have severe weather, and a low temperature has to be maintained, the houses and plants should be kept in a comparatively dry state. Plants will not suffer from low temperatures if they are sufficiently dry. Another important point is that the lowest temperature in the houses during the twenty-four hours should be the first thing in the morning, with a gradual rise till mid-day, and then a gradual fall till the next morning. At this time of year a rise, without the aid of sun heat, of about 5° between the morning and mid-day temperatures will be ample, but with the influence of sun heat more will be beneficial. A great aid towards making a genial temperature during severe weather is to lower the blinds and cover up the ends and sides of exposed houses each evening, and when this is done it will be found that it requires much less fire heat to maintain the same temperature. There are few things that Orchids resent more than over-heated pipes.

SPATHOGLOTTIS.—In the stove these most desirable and nearly

perpetual flowering Orchids have been freely producing their useful blooms since early autumn, and they are well worthy of more extended culture. The varieties now in flower with us are S. aurea, S. × kewensis, S. × Colmanii, S. × aureo-Vieillardii. The treatment necessary is to give them a humid spot in this house, and to see that they never, at any time, suffer from want of water at the root—that is to say, the evergreen varieties,—for the deciduous S. Fortunei requires a thorough rest during the winter months, maintaining this course till the young growths show signs of activity in the spring. It is not desirable to place this variety in a cooler house, as withholding water will give all the rest required.

The compost we find most suitable, for all of them, is two parts good fibrous loam, and one part each of peat, leaf soil and sphagnum moss, these being well mixed together, with a liberal sprinkling of coarse sand and small crocks. Ordinary pots, that are provided with three holes just under the rim for suspending them, are the best receptacles. A fair drainage of a few crocks should be given, and over this a layer of chopped sterilized bracken rhizomes, filling the pots to one-third of their depth. Pot moderately firm, leaving enough room to allow of a top dressing of chopped sphagnum.

Potting should be done when the young growths are about two inches high, taking no notice of the time of year. As they are such vigorous growers they soon exhaust the compost, and we find it good policy to repot them each year. In doing this, shake out as much as possible of the old material, and remove any back bulbs there may be behind the first two. If there is a desire to increase the stock, the back bulbs, if laid between plants on the stage or potted up in sphagnum, will soon grow away. After potting, especially when done during the winter season, water should be given with discretion till the roots have entered the new compost, striving to maintain it neither wet nor dry, but in that constantly humid state so much appreciated by many plants after disturbance of their roots.

BULBOPHYLLUM BARBIGERUM.—This charming curio is now with us in active growth, and should it be necessary to repot or resurface it, the most desirable time is when the young growth is emitting new roots. We generally get two growths a year, the second invariably flowering. So long as the compost is sweet, do not disturb the plant, beyond removing a little of the surface material and replacing with fresh, for the young roots to take hold of. A position in the hottest and most humid part of the stove should be afforded, always keeping the compost in a humid state. The flower-spikes should be removed if the plant fails to make a good growth.

STOVE.—In the Stove Orchid house constant observation is necessary at this season to see that no drip or condensation is causing havoc among the tender inmates. It may be necessary to withhold damping down altogether

during cold and inclement days, to prevent the plants being saturated with moisture in the morning, especially if the situation is a low and damp one, or if the house is one that naturally holds much moisture. Some houses contain more humidity without damping than others do with it, so that it is important that each house be considered individually and treated accordingly.

CATTLEYA HOUSE.—The flower buds on Cattleya Percivaliana and C. Trianæ are now fast pushing up, and the lightest position should be given them from now till after the flowering period is over. Rather more water than they have been receiving since the completion of growth is essential to properly develop their flowers, reducing the supply again directly the latter are removed, and continuing this course till growth activity is in evidence. This also applies to any of the hybrids now developing flowers.

Vigorous plants, especially of hybrids that have produced flowers, should be kept in a very dry state till new growth starts away. I am sure many strong bulbs are lost with that fatal black disease, from the fact that the plant has many active roots taking up more food than the growth requires—if water is given often during the short dull days—the cells of the bulb becoming over-charged with food, for which it has little use, setting up as a consequence that disease so well known to most of us. It invariably happens just after flowering, or during that period between the full development of the pseudobulb and its season of pushing its flower buds, when the plant is neither growing nor producing flowers. I have seen it in species as well as hybrids, but as hybrids are generally the best growers it is in these that it most often occurs.

DENDROBIUM HOUSE.—The flower buds on many of the deciduous and semi-deciduous varieties are now freely extending with us, and more water to the roots will be required than they have been receiving since the full development of the past season's growth, but even now allow the plants to become fairly dry before affording more water. When the outside temperature does not fall below 40°, maintain a minimum temperature of 65°, but during colder weather a minimum of 60° will be preferable. Any check given during the development of the flowers, either from lack of water or from too low a temperature, will reduce the size of the flowers considerably. I know many will consider I am writing this too soon, but we always try to have our Dendrobiums in flower during the latter part of January and February, and for several years past the first week in February has seen them at their best. When they are flowered early in the year they are more appreciated, and I have every hope that these beautiful Orchids will once again become popular.

INTERMEDIATE HOUSE.—For producing flowers during the first month of the year Lælia anceps takes a very prominent place among Orchids. We

now have in flower or just coming into flower, L. anceps Dawsoni, Sanderiana, Williamsii, Schrœderiana, Stella, waddonensis, alba (Bull's), Hilliana, and Hilliana rosefieldiensis, and what can be more lovely than these at any season? Flowering, as they do, during perhaps the dullest month in the Orchid year, makes them all the more desirable. Generally speaking they are most erratic in their habits; one will throw out many roots now, another in a month or two's time, some earlier, some later. Those that are rooting freely at this season are the ones that require most water, but even these should be allowed to become fairly dry before watering. Many of these will be ready for potting towards the end of the month, and the time for potting, should they need it, is when new roots are being emitted.

We have practised, with good results, the principle of cutting away the front portion of plants that have overgrown the pot or pan, taking off some times only the leading bulb, in other cases two and sometimes three bulbs. When that is done we do not disturb the old plant till the following year, beyond perhaps the removal of any sour surface compost, which is replaced with new. When an old specimen has several leads, if it is thought desirable, a young vigorous specimen may be made, and one that is not and will not be retarded with useless old back pseudobulbs for some considerable time. When this has been done we often find that the severed parts break back, as well as forward, much more frequently than when they are attached to the parent plant. If it is not desirable to make up a specimen plant, pot up each piece separately, and this method has points in its favour. In the first place they can be suspended close to the light—an important item—without making an ugly effect, or impeding much light; then, as they are generally very uncertain in producing flower spikes, the smaller flowering plants can be used better for decorative or exhibition work than is the case when a large specimen has only one or two spikes. I would not like to discourage the growing of specimens when suitable room can be given them, and when a specimen is well flowered it is an object of more than ordinary beauty, but if a well-exposed position cannot be given to specimens better results will be attained in smaller pots or pans.

A good compost for them consists of two-thirds good fibrous peat and one-third chopped sphagnum, mixed together with a liberal sprinkling of small crocks and coarse sand. Place a few clean crocks over the bottom of the pot or pan, then fill them nearly half full with bracken rhizomes, and pot moderately firm, surfacing with chopped sphagnum. We use for these, as far as possible, ordinary pots, in all sizes up to six inches. They are provided with three holes for suspending them, and the grower can either suspend or place them on the stage at his discretion. I am firmly of opinion that non-perforated receptacles are preferable to Orchid pans or

baskets, for when it is necessary to keep them dry, they will go much longer without water without any harm accruing, and I believe one root working away from the direct influence of light and air, such as is possible in a pot or non-perforated pan, will take up more food than two under the other conditions.

Newly potted plants will not require much water for some time. I consider the most essential point in producing flower spikes on the white forms is to try and keep them back from starting into growth as long as possible. It does not matter much how strong an early growth may come, it rarely produces a flower spike, yet with good treatment a large percentage of the growths that start away late, even if they are not anything like as strong as the early made ones, produce spikes.

The best way I have found of keeping them back is to place them at the coolest end of this house, well exposed to all light and sunshine, only giving enough water to prevent shrivelling, maintaining this course as long as it is possible without causing injury to the foliage. Even then some will break away, and when this happens it will be necessary to afford more water than the dormant ones are receiving.

MILTONIAS.—In this house the autumn flowering Miltonias will need attention. The young roots are emitted soon after the new growth gets away, and when these are visible any work, such as repotting, resurfacing, or propagating, should be accomplished. I do not advise potting unless they have over-grown the pots, or the compost is in a soured state, but it is generally advisable to remove some of the surface material, and add new for the young roots to take hold of. The stock can easily be increased by cutting away the last made pseudobulb with the new growth, just when new roots are being sent out. When this is done, do not disturb the old plant till it has made a new lead. A suitable compost consists of two parts peat, two parts sphagnum, and one part leaf soil, mixed with some small crocks and coarse sand. Place a few crocks over the hole in the pot, and fill to the depth of one-half with bracken rhizomes, and pot rather firmly, keeping the lead on a level with the rim of the pot, and leaving enough room for a surfacing of sphagnum. No heavy watering will be required for some time, as damping the surface moss as it becomes dry will suffice till the roots have well entered the compost. When growing, they like a humid position, and frequent damping between the pots will be helpful on all favourable days. Later on overhead spraying will be beneficial. Miltonias Regnellii, M. Clowesii, M. candida, M. spectabilis and their varieties, are very beautiful, and should be more generally seen, and in the hybrids, such as M. × Joiceyana, M. × Binoti, and M. × leucoglossa, we have colours not met with often, and most of them provide good material for button-hole work.

ORCHIDS AT SOUTHFIELD, EDGBASTON.

ORCHIDS are not largely grown in, or around, the suburbs of Birmingham. Therefore it gave me great pleasure, the other day, to see the very fine collection of plants got together by Wm. Waters Butler, Esq., at Southfield, Edgbaston. It is not long ago since Mr. Butler commenced to grow Orchids, yet already he finds it necessary to increase his glass accommodation, by building four more houses. One of these will contain Dendrobiums, one Cattleyas, and the other two are for Odontoglossums. These houses, now nearing completion, are span-roofed, face due north and south, and from what I saw, nothing is being left undone to make them adaptable for their respective inmates.

The Cool Orchids are at present grown in a lofty Octagon, which has served the purpose of a Cool-Intermediate house. Although the conditions, under which these plants have been grown, could not by any means be considered satisfactory, yet the plants have done remarkably well, and look the picture of health. The centre stage contained a well-flowered batch of Calanthe × Veitchii, × W. Murray, × Bryan, and C. vestita varieties, other things noted in flower being a fine lot of Oncidiums, such as O. varicosum Rogersii, O. flexuosum, fine varieties of O. Forbesii, O. cheirophorum, and O. macranthum, with Odontoglossums × Wilckeanum, Uroskinnerii, × mulus, Rossii majus, and Cervantesii, Sophronitis grandiflora, and Lycaste Skinneri. On the side stages the Odontoglossum crispum are grown. Many fine varieties have been flowered from amongst some of the more recent importations, and taken altogether the O. crispum look remarkably well, and show great promise to flower well at a later date.

In the Cattleya house were noticed, amongst a host of other plants, finely grown examples of C. labiata—one especially, a very fine, well-coloured variety, carrying seven flowers—C. Warscewiczii (gigas) in flower, C. Mendelii, C. Mossiæ, C. Trianæ, Lælia anceps, L. autumnalis, Vanda cœrulea, Angræcum sesquipedale, Saccolabium bellinum, several plants flowering freely, Vanda teres, V. × Miss Joaquim, Cattleya Harrisoniana, C. Loddigesii, Epidendrum × O'Brienianum, and Oncidium splendidum, pushing up vigorous long spikes. On a side stage are grown the Cypripediums, amongst which may be mentioned C. insigne Harefield Hall var., C. i. Sanderæ, C. bellatulum, well grown and flowered, and C. Spicerianum.

Another compartment contained a fine lot of well-grown Dendrobiums, and on the front stage were some fine plants of Cymbidium Tracyanum in flower, C. Lowianum and the yellow variety concolor, C. eburneum, and C. × Winnianum. The Dendrobiums all show well for flower later on. Besides a large number of unflowered seedlings from rare crosses, all the

best known hybrids and species are grown. D. nobile, D. Wardianum, D. Findlayanum, D. crassinode, D. primulinum, and the many hybrids from these species all showed their buds in a more or less advanced stage.

The next house of Orchids entered contained a very fine lot of hybrid Lælias and Cattleyas. A side stage was filled to excess with seedlings as yet unflowered, and these show remarkable progress since entering the collection. The centre stage contained fine plants of Cattleya Skinneri, C. Bowringiana and Lælia purpurata, also well-grown plants of Lælio-cattleya luminosa, highburiensis, Canhamiana, Gottoiana, Haroldiana, Henry Greenwood, G. S. Ball, callistoglossa, Aphrodite, eximia, Pallas, and Martinetii, Cattleya × Maroni, C. × Iris, and C. × Mantinii. In flower were examples of C. × Fabia, C. × fulvescens, L.-c. Cappei and L.-c. Sunray. Altogether the collection of hybrids are very fine and extremely well grown.

Mr. Butler is to be congratulated on the successful start he has made in this popular branch of horticulture, and doubtless more will be heard at some future time of the collection, so well looked after by his able gardener, Mr. Jones.

J. M.

OBITUARY.

ERNST PFITZER.—It is with great regret that we have to record the death, from heart failure, on December 3rd last, of Prof. E. Pfitzer, Professor of Botany at Heidelberg, and the author of various treatises on the morphology and classification of Orchids. Prof. Pfitzer was in England last summer, and took part in the recent Hybridisation Conference, when he read a paper entitled "Hybridisation as a proof of natural affinity among Orchids" (see p. 227 of our last volume). The deceased was the author of several important papers on Orchids. In 1882 appeared his *Grundzüge einer Ver gleichenden Morphologie der Orchideen*, a large quarto volume of 194 pages, with three plates and a coloured Frontispiece showing Cycnoches Warscewiczii bearing flowers of both sexes on the same pseudobulb. This was followed, in 1886, by *Morphologische Studien ueber die Orchideenblüthe*, an octavo volume with 139 pages and 65 figures, and, in 1887, by *Entwurf einer Natürlichen Anordnung der Orchideen*, a similar work of 108 pages. In 1889 he contributed an account of the genera of Orchids to Engler and Prantl's *Die natürlichen Pflanzenfamilien*, and in 1895 he wrote a paper entitled "Beitrage zur Systematik der Orchideen" for the nineteenth volume of Engler's *Jahrbücher*. In 1903 appeared his "Orchidaceæ-Pleonandreæ" in Engler's *Pflanzenreich*, for which work he was writing an account of the Cœlogyneæ on his last visit to England. In these different papers he emphasised the importance of a study of the vegetative characters in the classification of Orchids. It was in 1886 that Prof. Pfitzer

published the much debated genus Paphiopedilum, which has at length been adopted, though in a more restricted sense than at first proposed, for he also included the Tropical American species, but afterwards agreed to their separation. The deceased appeared to be in his usual health on his last visit to England, and his death is a great loss to Orchidology.

ODONTOGLOSSUM ROSSII AND ITS HYBRIDS.

ODONTOGLOSSUM Rossii, with its variety rubescens, is one of the most interesting and beautiful of Orchids, not only for its dwarf habit and its many pretty flowers, forming a graceful collar round the plant, but because it promises to be very useful for hybridising. It can evidently be used as the seed parent with both the Mexican and Colombian sections of the genus, thus connecting types which two years ago were considered as very distinct from each other.

Odontoglossum × Smithii (O. Rossii rubescens × Harryano-crispum), from Messrs. Charlesworth and Co., and O. × Fowlerianum (O. Rossii rubescens × cirrhosum), exhibited by Messrs. Sander and Sons, both very pretty, are known to every one, and the latter is a surprise in the unexpected brightness of its flowers.

After such successful experiments we can be certain that other hybrids even more wonderful will follow, because O. Rossii bids fair to succeed when hybridised with the allied genera, Miltonia and others. The enormous seed-pods that this species carries usually ripen after twelve or thirteen months, and the seeds rapidly germinate.

The young seedlings are also very vigorous when grown in an Intermediate house, kept near the glass in a sunny position. The hybrids of O. Rossii, like their parent, require a long rest, and during that time much less water is required. After two or three years most of the plants are strong enough to show their flowers.

Every one interested in Orchid hybrids may find here an immense field for experiment, as the work of hybridising this popular genus is still in its infancy.

P. BOPPE.

CYPRIPEDIUM GODEFROYÆ LEUCOCHILUM.—We have a small plant of Cypripedium Godefroyæ leucochilum (Hessle var.), but unfortunately it does not seem to make much progress. We grow it with the warm Cypripedes, and give it the same treatment as C. bellatulum and niveum. Perhaps some readers of the *Orchid Review* might give their experience with this plant?

W. M.

PAPHIOPEDILUM INSIGNE SANDERÆ.

OUR last volume contained (pp. 3, 360) an account of the remarkable batch of Cypripedium or Paphiopedilum insigne Sanderæ in the collection of W. Bolton, Esq., Wilderspool, Warrington. Mr. Bolton has sent us a few flowers, which were splendidly developed in every respect, showing that the plants must have been exceptionally well grown—in fact we do not see how

Fig. 3. PAPHIOPEDILUM INSIGNE SANDERÆ.

such culture can be improved upon. Mr. Crawshay has also sent us a photograph showing a perfect forest of flowers, and with a few examples before us we can realise his remark that such a sight would be well worth a journey to see. The photograph has been taken since Mr. Crawshay's

visit, but being on a smaller scale than the one shown in a recent issue of the *Gardener's Chronicle* (1906, ii. p. 367, fig. 141), and also taking in the whole of two houses, is hardly suitable for reproduction, though the details of the flowers can be made out readily with a lens. We, however, give an illustration of a fine plant which flowered several years ago in the collection of G. S. Ball, Esq., and one has only to imagine the flowers a soft greenish yellow tipped with white on the dorsal sepal to realise its beauty. The history of the variety has already been given, and it is fortunate that so charming a plant should now be accessible to every Orchidist.

SOCIETIES.

ROYAL HORTICULTURAL.

THE meeting held on December 9th was the last of the year, and brought together a remarkable collection of Orchids, the awards consisting of one Gold, one Lindley, and five other medals, four First-class Certificates, and eight Awards of Merit.

G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page), staged a remarkable group, which occupied two-thirds of the end staging in the Hall with a nearly equal space on one of the sides, to which the Society's Gold Medal was awarded. The group consisted largely of finely grown and flowered Cypripedes, particularly C. insigne, of which about two hundred forms were present, and these were set off to advantage by selections of Oncidium varicosum, Dendrobium Phalænopsis, Vanda cœrulea, Odontoglossums, etc. Among the more noteworthy features may be mentioned an almost complete series of the yellow forms of C. insigne, the Harefield Hall variety, with seventeen flowers, and the curious three-lipped variety Oddity (which is figured at page 57 of our eighth volume). C. × Leeanum and C. × Actæus were also represented by a good series of varieties, while C. × Mrs. E. V. Low, C. × Blanche Moore, and forms of C. × Niobe were very beautiful.

Mrs. T. B. Haywood, Woodhatch, Reigate (gr. Mr. Salter), staged a remarkable collection of eighteen large specimens of Masdevallia tovarensis, each bearing over a hundred spikes of its charming pure white flowers, the Lindley Medal being deservedly awarded. For a full account of these plants and their culture see pp. 69, 70 of our last volume.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), was awarded a Silver Flora Medal for a beautiful group, containing many varieties of Cypripedium insigne, including the Harefield Hall var., and several var. Sanderæ, a fine Masdevallia cucullata, bearing thirteen of its claret-coloured flowers, a lot of Sophronitis grandiflora, and several Lælio-cattleyas raised in the collection, including epicasta and Phryne (the latter figured at page 17). An Award of Merit was given to Dendrobium Phalænopsis Gatton

Park var., a charming white form, tinged and veined with slaty blue on the lip.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), sent a few choice things, gaining an Award of Merit for Cymbidium × Wiganianum, Westonbirt var. (eburneum × Tracyanum), a handsome form having ivory white flowers with light purple dotted lines on the sepals and petals, and red-brown blotches on the lip, and First-class Certificates for Cypripedium × Actæus langleyense (insigne Sanderæ × Leeanum giganteum) and Cattleya × Dusseldorfii var. Undine (intermedia alba × Mossiæ Wageneri), the latter a charming pure white hybrid with a primrose yellow disc to the lip.

J. F. Craven, Esq., Keighley, Yorks. (gr. Mr. Corney), received a First-class Certificate for Cypripedium × eboraicum, a very handsome thing, recorded as C. insigne Harefield Hall var. × nitens magnificum Ball's var., and most like the former. An Award of Merit was given to C. × Zeno, Craven's var., from the reverse cross, and rather more like the nitens parent.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Bronze Banksian Medal for a small group of hybrid Cypripedes, Restrepias, the rare Miltonia Endresii, and others.

S. Briggs-Bury, Esq., Bank House, Accrington (gr. Mr. Wilkinson), sent a few good Cypripedes, an Award of Merit being given to C. × Actæus, Bank House var., having dotted lines on the white dorsal sepal, and greenish sepals and petals.

D. O. Drewett, Esq., Riding Mill-on-Tyne (gr. Mr. Renwick), received an Award of Merit for Cypripedium × Actæus superbum, a very fine form having a white dorsal sepal. He also sent a number of cut flowers of C. insigne and others.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent Odontoglossum × Wilckeanum, Fowler's var., and O. × amabile, Glebelands var., the latter a very fine cream-white flower, heavily spotted with purple, which gained an Award of Merit.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkinson), sent the beautiful Læliocattleya Norba superba, Cypripedium × Curtisio-præstans, C. × Fred Hardy var. superbum, C. × Charlesianum Rex, C. tonsum, Westfield var. and Brassolælia Mrs. M. Gratrix, Westfield var., the latter a fine dark form, almost uniformly reddish orange in colour, which gained an Award of Merit.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), showed the beautiful orange-scarlet Sophrocattleya Doris.

Messrs. Sander and Sons, St. Albans, staged a choice group to which a Silver Banksian Medal was given. It contained a fine example of Dendrobium formosum giganteum, with the handsome Vanda Sanderiana on

either side, together with Lælia Gouldiana, forms of L. anceps, Trichopilia laxa, Saccolabium bellinum, Cypripediums, and others. A First-class Certificate was given to the handsome Cœlogyne Mooreana, a very handsome Annamese species allied to C. cristata, and bearing an arching raceme of large white flowers, with a yellow disc to the lip and several rows of yellow papillæ.

Messrs. James Cypher and Sons, Cheltenham, received a Silver Flora Medal for a very fine group, consisting largely of Cypripediums, and including a fine series of C. insigne forms, C. × Leeanum, C. × Niobe, C. Fairrieanum, various Odontoglossums, including a good O. Uroskinneri, and other showy things.

Messrs. Heath and Sons, Cheltenham, also received a Silver Flora Medal for a very fine group of Cypripedes.

Messrs. Charlesworth and Co., Heaton, Bradford, received an Award of Merit for Odontioda × heatonensis var. St. Vincent, handsomely spotted with carmine-rose, and having broader segments than the original, which was described at page 118 of our last volume.

Messrs. Hugh Low and Co., Enfield, staged a small group, containing some good forms of Cypripedium insigne, Cattleya × Clarkiæ, and other good things.

Messrs. J. W. Moore, Rawdon, Leeds, sent a pretty group, containing Lælio-cattleya Helena, Oncidium ornithorhynchum, Cymbidium × Cravenianum (Lowianum × Tracyanum), having light yellow flowers striped with reddish purple, and some good Cypripedes.

Messrs. Linden, Brussels, sent two handsomely blotched forms of Odontoglossum crispum, obtained from seed (see description on page 22).

Mr. J. Douglas, Edenside, Great Bookham, sent a number of cut sprays of Lælia × Briseis.

Messrs. Edgar and Co., South Woodford, sent a small group of Cypripedes.

Mr. G. W. Miller, Clarkson Nurseries, Wisbeach, sent a very fine form of Odontoglossum × Andersonianum.

DIPLOMA AWARDS.

The subjects of the last special competition were Cypripedium insigne and C. Spicerianum, with their hybrids, and Calanthe and hybrids, and the awards were as follows :—

CYPRIPEDIUM INSIGNE.—First Diploma to C. i. Harefield Hall var., Second Diploma to C. i. Sanderæ, both from Jeremiah Colman, Esq.

C. INSIGNE HYBRIDS.—First Diploma to C. × Thalia, Mrs. Francis Wellesley, Second Diploma to C. × Thalia giganteum, both from Francis Wellesley, Esq.

C. SPICERIANUM HYBRIDS.—First Diploma to C. × Niobe, Oakwood

var., from Francis Wellesley, Esq., Second Diploma to C. × Memnon, from S. Briggs-Bury, Esq.

CALANTHE HYBRIDS.—First Diploma to Calanthe × Alpha, Second Diploma to C. × revertens, both from Jeremiah Colman, Esq.

SCIENTIFIC COMMITTEE.

CATTLEYA FLY.—Mr. Sanders reported that the shoots of the Orchids shown by Mr. Bowles were undoubtedly infested by the so-called Cattleya Fly (Isosoma Orchidearum), a hymenopterous insect belonging to the family Chalcidideæ, the members of which are parasitic on other insects as a rule. This family is nearly allied to the Cynipideæ, or true gall makers. He could not recommend any remedy but the very obvious one of burning, or in some other way destroying the infected shoots, and the present would be a very good time for this, as most of the insects are in the pupal stage, just ready to emerge.

ONCIDIUM WALUEWA.—Dr. Masters reported that he had examined this plant, and could find nothing sufficiently remarkable in its structure or history to entitle it to a Botanical Certificate (see note at page 20).

PLEUROTHALLIS SP.—Mr. Rolfe reported that he had not yet succeeded in identifying the species exhibited at the last meeting.

MALFORMED ORCHIDS.—Dr. Masters showed, on behalf of Mr. McBean, of Cooksbridge, a specimen of Odontoglossum crispum in which all the parts of the column which are usually confluent were developed in the form of free petals, resulting in the formation of a double flower. Mr. Bennett-Poë showed a Cypripedium in which the dorsal sepal was doubled, on which Dr. Masters will report.

HYBRID ORCHID.—Mr. Douglas showed flowers of an Orchid obtained from seed of Lælia harpophylla crossed with pollen of L. purpurata, in which the only trace of the latter in colour was a small purple spot in the front of the lip. Dr. Masters will report on it.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A meeting was held at the Coal Exchange, Manchester, on November 22nd last, when there was a very fine display, and the awards included two Gold Medals, two First-class Certificates, and five Awards of Merit.

The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. Ashton, Cypher, Cowan, Keeling, Leemann, Ritchie, Rogers, Smith, Shill, Thorp, Warburton, Williamson, Sander, and P. Weathers (hon. sec.).

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), staged a magnificent group of choice and showy Orchids, to which the Society's Gold Medal was given. First-class Certificates were given to Cattleya ×

Fabia ardentissima and Cypripedium × King Haakon, both magnificent things, and Awards of Merit to Lælio-cattleya Clive magnifica, L.-c. Clive, Vine House var., Cypripedium insigne rotundiflorum and C. × Milo, Vine House var.

O. O. Wrigley, Esq., Bury (gr. Mr. Rogers), staged a magnificent group of finely-grown Cypripediums, to which a Special Vote of Thanks was accorded.

Messrs. James Cypher & Sons, Cheltenham, staged a very fine group, consisting largely of Cypripediums, to which the Society's Gold Medal was awarded.

Messrs. Charlesworth & Co., Heaton, Bradford, received an Award of Merit for Cypripedium × Lord Ossulton, Heaton var.

Messrs. Sander & Sons, St. Albans, staged a very interesting group of Orchids.

BULBOPHYLLUM INUNCTUM.

THIS is a large-flowered species of Bulbophyllum which has just bloomed at the Buitenzorg Botanic Garden, and has been described and figured by Mr. J. J. Smith (*Ic. Bogor.* iii. t. 215). It is a native of Borneo, and belongs to the section Sestochilos, being most allied to B. insigne, Ridl. The flowers are larger than in B. Lobbii, and the sepals are longer, and densely dotted with purple on a light ground, while the long drooping petals bear a few purple stripes, somewhat recalling those of Paphiopedilum Stonei. It seems to be rare or local, for Mr. Smith states that it has long been cultivated at Buitenzorg, but that during his fourteen years' residence there it has not again been imported among the numerous Bornean collections received. The plant blooms only once annually, but then very abundantly, and at this period it always attracts a number of small brown flies, which alight on the lip, to feed on a fluid substance which exudes in minute drops round the margin. The weight of the insect upsets the delicately balanced lip, which topples over, and throws the insect against the face of the column, the result being that the glutinous pollinia are fixed to its back. They then struggle to get away, but only a few of them succeed, and these are so much weighted with the heavy pollinia that they fall to the ground, and at most are only able to crawl up again on to an adjacent branchlet. The result is that the flowers are not fertilised, the insects not being strong enough to remove and carry away the pollinia. It is evident that some larger, stronger insect exists where the species grows wild, the flies mentioned probably being adapted to fertilise some smaller species. Mr. Smith shows on the plate one of these flies firmly fixed to the column. It would be interesting if residents in the tropics would observe more of the insects by which Orchids are fertilised.

CŒLOGYNE MOOREANA.

THIS handsome Cœlogyne, for which Messrs. Sander & Sons received a First-Class Certificate at the R.H.S. meeting, held on December 11th last, proves to be the first really close ally to the well-known C. cristata that has yet appeared, and in its large pure white flowers, with numerous yellow hair-like appendages on the disc of the lip, the resemblance is remarkably close. But there are marked differences, for the new-comer has longer leaves and scapes, deciduous bracts, and smaller flowers. The leaves range from nine to sixteen inches long, and the scapes from eight to twelve inches, and bear several flowers. It is a native of Annam, where it was discovered by Mr. W. Micholitz, when collecting for Messrs. Sander. Whether it will always flower in the winter perhaps remains to be proved, but it promises to be a very handsome addition to the genus.

R. A. R.

NOVELTIES.

THE last part of the 1906 volume of the *Kew Bulletin* contains descriptions of the following novelties:—

DENDROBIUM CONVOLUTUM, Rolfe.—A New Guinea species allied to D. chloropterum, Rchb. f. and S. Moore, and having light green flowers, and some brown markings, chiefly on the lip. It was introduced by Messrs. Sander & Sons, and flowered with them in November, 1898, and afterwards with Sir Trevor Lawrence, Bart.—p. 375.

CŒLIA DENSIFLORA, Rolfe.—Allied to C. Baueriana, Lindl., but differing in having a very short dense inflorescence. It flowered at the Royal Botanic Gardens, Glasnevin, having been obtained from Messrs. John Cowan & Co., without record of its origin, but a dried inflorescence from Guatemala, Skinner, is believed to be identical. The flowers are white, with a light yellow anther case.—p. 375.

ONCIDIUM CLAESII, Rolfe.—An ally of O. tenense, Rchb. f., recently introduced to cultivation by M. Fl. Claes, of Brussels. The inflorescence is described as 12 to 18 feet long, entangled and twisted round the branches of a shrub, and bearing numerous large flowers with chocolate-red sepals, the petals and lip carmine, tinged with violet, and the crest yellow.—p. 376.

GOMESA SCANDENS, Rolfe.—Introduced from Brazil by M. Binot, in 1902, and flowered at Kew in July of the following year. It has greenish yellow flowers, but differs from all others in its scandent habit and distant monophyllous pseudobulbs.—p. 376.

TRIGONIDIUM SUBREPENS, Rolfe.—Allied to T. tenue, Lodd., but larger in all its parts, and having greenish yellow flowers lined with brown. It was introduced by Messrs. Sander, and afterwards by Messrs. Hugh Low & Co.

who sent to Kew a plant, which flowered there in June last. The habitat is not recorded.—p. 377.

RENANTHERA ANNAMENSIS, Rolfe.—Introduced from Annam by Messrs. Sander & Sons through their collector, W. Micholitz, and flowered at Kew in May last. It is much like R. Imschootiana, Rolfe, in habit, but the flowers are only about half as large and very numerous. They are yellow, much spotted with crimson on the sepals, spur and base of the petals, while the lobes of the lip and apex of the petals are deep crimson.—p. 377.

LISTROSTACHYS BROWNII, Rolfe.—A very distinct species collected at Entebbe, Uganda, by Mr. E. Brown, who remarks that it grows in masses, and when in flower is a very showy plant. The habit is compact, and the flowers white and fragrant, and arranged in dense racemes. It is not yet in cultivation.—p.378.

PLATYLEPIS AUSTRALIS, Rolfe.—A Natal species allied to the West Tropical African P. glandulosa, Lindl., with which it has hitherto been united. It has recently flowered at Kew.—p. 378.

PLATYLEPIS DENSIFLORA, Rolfe.—A Madagascar species allied to the preceding, which was introduced by M. Warpur, and flowered at Kew in December, 1901. Flowers light green with a whitish lip.—p. 378.

CYPRIPEDIUM WILSONI, Rolfe.—A native of Szechuen, Western China, where it was discovered by Mr. E. H. Wilson, at Meng Hu Kang, a pass between Wantung and Mosimien, on the main road from Tzutati to Tatienlu, in woods, under dense shade at 2,400 metres elevation. It is the largest-flowered species known, and has the sepals and petals alternately striped with yellow and chocolate, and the lip pale yellow with chocolate spots. It is not yet in cultivation.—p. 379.

CYPRIPEDIUM × MILO WITH FREE LATERAL SEPALS.

I THINK the enclosed photos of a Cypripedium × Milo which I flowered recently may be of interest. There are two complete lateral sepals, giving the flower a much improved appearance, as the sepals give a complete background to the dark coloured petals. I believe it is a most unusual occurrence.

ALFRED G. GROVES.

[There are two photographs, showing the front and back of the flower. The occurrence is rare, though we have seen it in two or three species and hybrids, and in each case the divided sepals diverge at an angle of about 45° from the normal united position. It may not be repeated at the next time of flowering. The hybrid was raised by Messrs. Veitch, flowering in 1894, the parents being C. insigne Chantinii ♀ and C. œnanthum superbum ♂.—ED.]

CYCNOCHES LODDIGESII.

CYCNOCHES LODDIGESII is the original species of a very remarkable genus, which was established by Lindley, as long ago as 1832, upon a single flower sent to him by Messrs. Loddiges (*Gen. & Sp. Orch.* p. 154), the generic

Fig. 4. CYCNOCHES LODDIGESII.

name, "Swan's neck," being given in allusion to the long, slender column, gracefully curved like the neck of a swan. A year later Messrs. Loddiges figured the plant (*Bot. Cab.*, t. 2000), remarking:—"This extraordinary plant is a native of Surinam: it was sent to us in 1830, by our kind friend

Mr. Lance; and it flowered in May, and again in the winter of 1832." Soon afterwards, in August, 1836, what was thought to be a second species of the genus flowered in the collection of Mr. Willmer, of Oldfield, Birmingham, and was sent to Lindley, who called it C. cucullata. It had a short column, hooded and dilated at the apex, and broad petals and lip. In the autumn of 1836, however, and before the name was published, a plant in the garden of the Horticultural Society startled Lindley by producing flowers of C. Loddigesii on one side of the pseudobulb and those of C. cucullata on the other side (*Bot. Reg.* sub. t. 1951*). Lindley was completely mystified, and could only term the phenomenon a "freak," though it is now known that the two are sexes of the same species, C. cucullata being the female. About this time the species was much cultivated and highly esteemed, but ultimately it became rare, if not completely lost sight of, though of late years it has reappeared, and has frequently been seen in flower. The annexed illustration represents a plant which recently flowered at Kew, and is reproduced from a photograph taken by Mr. F. W. Rolfe, which shows the flowers greatly reduced. These are, of course, males, but females have appeared in the collection of H. J. Elwes, Esq. (*O.R.* ii. pp. 277, 354). The sepals and petals are light green, more or less suffused and veined with pale brown, and the lip is porcelain white, with a few dark purple-brown spots near the base, and an area of the latter colour at the junction of the lip and column. The flowers exhale an aromatic perfume.

R. A. R.

ODONTOGLOSSUM × ARMAINVILLIERENSE.

A FLOWER of a very beautiful Odontoglossum seedling is sent by M. Ch. Vuylsteke, of Loochristi, which M. Vuylsteke describes as the best in form he has ever seen. Nothing is said as to its origin. Had it appeared as a wild plant it would probably have passed as a very fine round form of O. crispum, but from the broad obtuse sepals and petals, a slight tendency to be pandurate in the lip, the shape of the side lobes of the crest, and the broad, slightly crenulate column wings, we believe that O. Pescatorei is in some way concerned in its ancestry, and therefore provisionally refer it to O. × armainvillierense. Among existing varieties it is most comparable with the variety inornatum. The petals have an expanse of $3\frac{1}{4}$ inches, and are themselves an inch and a half across, while the sepals are an inch and a sixth across. The colour is pure white, with three red-brown blotches on the dorsal sepal, and about five on the lateral, the petals unspotted, and the lip with a pair of confluent blotches in front of the yellow crest. There are some minute purple dots on the basal margin of the lip. Whatever its origin it is very beautiful.

R. A. R.

ODONTOGLOSSUMS FROM BRUSSELS.

FLOWERS and photographs of several beautiful seedling Odontoglossums have been sent to us by M. Lucien Linden, Brussels.

O. CRISPUM TRIOMPHE DE MOORTEBEEK, of which both flower and photograph are sent, is said to have been obtained from O. crispum Reine Emma × O. c. Prince Albert, and thus is from the same cross as O. c. Madame Linden (*Gard. Chron.* 1906, ii. p. 419, fig. 156). The flower sent is of excellent shape and remarkable richness of colour, the sepals and petals being broad, and the ground colour suffused with pink, but largely obliterated except at the apex by confluent vinous-purple blotches, a large area across each petal being one solid mass of colour. The lip is yellow in the centre, and has several large blotches. It should develop into a great beauty when the plant becomes strong.

O. C. EMINATUM, represented by a photograph only, is very similar to the preceding in respect of markings, but the segments are not quite so broad, and the apex is more acute, while the colour is described as white with "dark havana silk" blotches. The origin is not stated, but we should judge that it came from the same capsule as the two mentioned above.

O. C. JEAN LINDEN (photograph only) is larger, and has longer sepals and petals, with the blotches lighter and more broken up, and thus showing more of the ground colour. It is described as white and pink, with reddish brown blotches, and is said to be a cross between O. c. Lindeni and O. c. primatus. It was exhibited at the R.H.S. meeting held on December 11th last.

The three others are represented by a flower each. The first is said to have been derived from O. crispum × O. × Coradinei Lindeni, and thus is a form of O. × crispodinei, figured at page 241 of our thirteenth volume. It is of rather better shape, and the sepals have each two large blotches instead of a single one. The ground colour is ivory-white, and the blotches dark cinnamon brown. A second is derived from O. crispum × O. Andersonianum, and thus is a form of O. × Stewartianum, figured at page 120 of our last volume. It has, however, rather narrower, more acuminate segments, which are almost as regularly blotched as in O. gloriosum. The ground colour is ivory white, and the spots deep red-brown. Had it appeared as a wild form it would have been referred to O. × Andersonianum. The third is derived from O. crispum × O. × Wilckeanum, to which cross has been assigned the name of O. × mirum, though the one first raised by Mr. Crawshay was quite unspotted, indeed like a poor O. crispum. This, however, is a very handsome thing, having broad segments, white in colour, with a few very large red-brown blotches on the sepals, smaller, more numerous ones on the petals, and one very large blotch on the front of the

lip. As the varietal Lansbergeanum is suggested it may bear the name of O. × mirum var. Lansbergeanum.

It is certainly a very interesting and beautiful series.

WHEN TO SOW CYPRIPEDIUM SEED.

I AM desirous of obtaining the opinions of Orchid experts, as to the proper time to sow Cypripedium seed, after the seed pod is ripe and has been cut. Personally, I held the opinion that the seed should be sown at once when gathered, but my gardener holds contrary ideas on the subject, and recommends the seed to be kept until March, April or even May, when spring-like weather begins and the sun gets much more power. During the last few days, I have been going through our register of seed sowing and its results, and certainly find that the shortest time of seed germination is to be found with seed sown in early spring. Our record time for seed germination is about 2½ months, and there are many instances of seed having germinated in three months or a few weeks over that time. It would appear that my ideas don't work out in practice, for our registrations show many more failures and bad germination with early sown seed than when the seed has been kept for a month or two, before being sown on the pots. One evil against sowing the seed as soon as ripe is that while the seed is lying on the compost and is not germinating, there is much more chance of the seed being washed away and lost, when the pots are watered. I have been a raiser of Cypripedium seedlings for many years, and have had fair success in numbers, but the quality has been very poor indeed, and most of the plants which have flowered have been complete wastrels and of no use whatever. I should be very pleased if some of your correspondents would give their ideas in your valuable paper, as I think we have much to learn about this interesting subject.

O. O. WRIGLEY.

Bridge Hall, Bury.

ODONTOGLOSSUMS AND ONCIDIUMS.

ORCHIDS at Elmwood Park, Hill Road, Croydon, are well known in the horticultural world, for Mr. J. W. Potter specialises in this pleasing class of plant, and his gardener, Mr. W. H. Young, read a paper before the Croydon Society recently. Preceding his method of culture, he explained the best type of house for growing them in, advising a span roof running east to west, and with top and bottom ventilation. Much detail on ventilating was given, for this plays an important factor in successful treatment. A double stage was also advised, the lower one being covered with coke. Earth floors with pathway made of battens he strongly recommended, as by this method a prolonged moist atmosphere can be maintained. He also gave instructions for size and position of piping for heating. Mr. Young is

a great advocate of leaves in the compost, but he was careful to observe that the grower should be fully acquainted with this method before attempting experiments, otherwise the desired success may not always be obtained. Watering with soft rain water is another practice to adopt, and saturation he does not agree with.—*Journal of Horticulture.*

THE *Gardeners' Chronicle* adds that, commencing with the imported plant, the instructions given covered the whole period of growth, from the commencement of root action to the production of the flowering spike.

CYPRIPEDES FROM BURY.

I SEND you a selection of the finest of my Cypripedes now in bloom, and I beg you to accept them with compliments and best wishes for Christmas and the New Year. We are of opinion that most of the blooms are as fine, if not finer in size, and more brilliant in colour than we ever had them. Although we have been passing through a terribly wet and sunless time, we have escaped with fewer fogs than usual, and our Cypripedes—we have about a thousand flowers open—have had a happier time in consequence. You will see that the bulk of the flowers belong to that grand and most useful species named insigne, of which I have now a very good collection of all the finest and most modern varieties which have appeared in collections during late years. Among the other Cypripedes you will find four seedlings of my own raising, and among them you will note C. Olivia, which flower sets at rest all doubt as to its true parentage, as it has been raised from C. tonsum × niveum. I am sending you 15 yellow insignes, all of which are very beautiful, when closely examined.

OSWALD O. WRIGLEY.

Bridge Hall, Bury.

[A very beautiful series, all the flowers being very finely developed, and affording evidence of excellent culture. The spotted insignes are 24 in number, and include most of the familiar varieties, while of the yellow, Sanderæ must still be placed first. Of 11 C. × Leeanum no two are alike, and the series contains most of the best forms. There are several other beautiful hybrids, mostly well known things which must be passed over with this brief mention. The four seedlings are, C. × Olivia, by far the finest form we have seen, C. × Tautzianum (niveum × barbatum Warneri), C. × Leeanum flavum (insigne Sanderæ × Spicerianum), with yellowish green ground colour, and C. × Charlesianum (Leeanum × nitens Lucienianum), a fine thing, very regularly dotted with purple on the dorsal sepal, except at the apex and margin. It is impossible to do justice to such a beautiful series in the space at disposal, and we can only add that the group is quite indispensable for decorative purposes during the winter.—ED.]

ORCHIDS IN SEASON.

Several interesting flowers are sent from the collection of Walter R. Scott, Esq., Crieff Villa, Chester-le-Street. They include Paphiopedilum × politum and P. × œnanthum superbum, Cattleya × Fernand Denis, two forms of C. × Portia, C. Eldorado, three C. labiata, one light form having almost lost the characteristic veining in the throat, and the handsome Oncidium Forbesii; forming a brilliant little group. The four first mentioned are from the collection of the late Reginald Young, Esq., from which source Mr. Scott remarks that he purchased many species, and hybrid seedlings. A flower of a seedling Paphiopedilum is also enclosed which was purchased at Newcastle last spring. It appears to be a hybrid between P. villosum and some species near to P. Curtisii. but the exact parentage is not certain.

A flower of Odontogloosum crispum George Warocque is sent by M. Fl. Claes, of Brussels. It is remarkable for having one very large solid rather light purple blotch on each of the sepals and petals, while the ground colour is pure white. The shape is good, and it should develop into a very handsome thing.

The handsome Paphiopedilum × Thalia giganteum, to which an Award of Merit was given by the R.H.S. on November 21st, 1905, is again in flower in the collection of Francis Wellesley, Esq. A comparison with the variety punctatum, figured at page 107 of our thirteenth volume, shows that the spots on the dorsal sepal are still more numerous, and rather more confluent in lines. It is remarkably handsome.

Flowers of the pretty little Odontoglossum platychilum are sent from the collection of R. N. Hooper, Esq., of Chipping Sodbury. The plant was obtained at Messrs. Protheroe & Morris' Sale Rooms on April 14th, 1905, and has a bright rose ground colour, not white as in the original.

Flowers of the beautiful Calanthe vestita, so useful at this season, are sent from the collection of W. Waters Butler, Esq., of Edgbaston, together with a good Lælia pumila, a charming little hybrid between Cattleya Bowringiana and Lælio-cattleya Clive, and a very pretty form of Cattleya Trianæ with blush white sepals and petals.

LAW NOTES.

LEEMANN v. LINDEN & Co.—An appeal having been lodged against the judgment in this action, which was reported very fully in our last volume (pp. 161-164), the case came on before the Brussels Court of Appeal on November 19th last. The Court, however, confirmed the original judgment, as we learn from the *Journal des Tribunaux* for December 9th. It will be remembered that five plants of Odontoglossum crispum were purchased

for 30,000 francs (£1,200) on the strength of coloured drawings supplied by the defendant, but when the plants flowered they were not equal to the representations, hence the dispute, already reported. The result of the trial, now confirmed, is that the sale is annulled, the purchase money to be repaid with interest and expenses, in addition to the sum of 5,000 francs damages. It has been a long trial, and the law expenses, we believe, have been heavy. We understand that the money has been paid.

NOTES.

Two meetings of the R.H.S., to be held at the Royal Horticultural Hall, Vincent Square, Westminster, are announced for January, on the 8th and 22nd, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. These two meetings conclude the Society's year.

The next meetings of the Manchester and North of England Orchid Society are fixed for January 10th and 24th and February 7th, at the Coal Exchange, Manchester. The Orchid Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

After a considerable interval, another part of Lindenia has appeared, or rather the 9th to the 12th part of the seventeenth volume combined in one. The plates are included under "Orchid Portraits" on page 32, but we may remark that the plant figured as Oncidium incurvum album is certainly O. ornithorhynchum album, and that "Rolfe" is not the author of Cypripedium glaucophyllum. The plate of Odontoglossum crispum Graireanum does not recall to our mind that beautiful variety, which we have twice seen in flower. We also find part of our remarks respecting Oncidium Leopoldianum cited, but the statement that the plant was O. corynephorum, Lindl., not O. Leopoldianum, for which it was exhibited, is omitted.

ORCHID PORTRAITS.

BRASSOCATTLEYA MRS. J. LEEMANN INVERSA.—*Gard.* 1906, ii. p. 311, with fig.

CATTLEYA × HARDYANA VAR. MAJESTICA.—*Lindenia*, t. 801.

CATTLEYA × PANNEMAEKERIANA.—*Lindenia*, t. 802.

CATTLEYA TRIANÆ VAR. BRANDNERIANA.—*Lindenia*, t. 804. VAR. FASCINATOR.—*Lindenia*, t. 810.

CYPRIPEDIUM × CHANTINO-LAWRENCEANUM.—*Lindenia*, t. 812.

CYPRIPEDIUM × EBORAICUM.—*Journ. Hort.* 1906, ii. p. 589, with fig.

CYPRIPEDIUM × GERMAIN OPOIX, WESTFIELD VAR.—*Gard. Chron.* 1906, ii. pp. 410, 411, fig. 154.

CYPRIPEDIUM GLAUCOPHYLLUM.—*Lindenia*, t. 811.

CYPRIPEDIUM INSIGNE VAR. CINNAMOMEUM.—*Lindenia*, t. 805.

CYPRIPEDIUM INSIGNE SANDERÆ (house of).—*Gard. Chron.* 1906, ii. p. 366, 367, fig. 141.

CYPRIPEDIUM × LATHAMIANUM VAR. PRINCEPS.—*Lindenia*, t. 808.

CYPRIPEDIUM × LEEANUM CORONA.—*Journ. Hort.* 1906, ii. p. 569. with fig.

CYPRIPEDIUM × LUCIENIANUM SUPERBUM.—*Lindenia*, t. 806.

CYPRIPEDIUM × MACROCHILUM GIGANTEUM.—*Journ. Hort.* 1906, ii. p. 543, with fig.

CYPRIPEDIUM × STEPHANOS.—*Gard. Mag.* 1906, p. 798, with fig.

CYPRIPEDIUM × THEODORE BULLIER.—*Lindenia*, t. 814.

CYPRIPEDIUM × VIALIANUM.—*Lindenia*, t. 807.

CYPRIPEDIUM × YOUNGIANUM SUPERBUM.—*Gard. Chron.* 1906, ii. p. 439, fig. 165.

DENDROBIUM CHRYSANTHUM.—*Gard. Chron.* 1906, ii. p. 374, fig. 143; *Gard.* 1906, ii. p. 272, with fig.

DENDROBIUM × LUNA.—*Amer. Gard. Chron.* 1906, p. 106, with fig.

DENDROBIUM SPECIOSUM HILLII.—*Amer. Gard. Chron.* 1906, p. 106, with fig.

DENDROBIUM WARDIANUM GIGANTEUM.—*Amer. Gard. Chron.* 1906, p. 105, with fig.

ODONTOGLOSSUM × CHROMATICUM, L. Lind.—*Lindenia*, t. 809.

ODONTOGLOSSUM CRISPUM GRAIREANUM.—*Lindenia*, t. 813. VAR. JEAN LINDEN.—*Gard. Chron.*, 1906, ii. pp. 418, 419, fig. 155. VAR. MADAME LINDEN.—*Gard. Chron.* 1906, ii. p. 419, fig. 156.

ONCIDIUM INCURVUM ALBUM.—*Lindenia*, t. 803. This is O. ornithorhymchum album.

VANDA TERES VAR. AURORA.—*Journ. Hort.* 1906, ii. p. 521, with fig.

VANDA WATSONI, Rolfe.—*Bot. Mag.* t. 8109.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used) Subjects of special interest will be dealt with in the body of the work*].

A.B.—We have several times seen these distorted Cypripedes, and in some cases we believe the peculiarity is constitutional, though this cannot apply to such a well-known thing as C. × œnanthum superbum, unless it is from a later batch. for many of the plants in cultivation are subdivisions of the original, which is, usually, at least, quite normal. We do not know enough about C. × triumphans Youngii to say if the peculiarity is accidental, or will be repeated. If the plants are healthy we should like to know what happens next year.

E.R., J.B., F.W.M.—Unavoidably deferred till next month.

Photographs received with thanks. W. B, L L., Ch. V., A. G. G.

G.K.D.—The matter is under consideration.

F.D.—Many thanks. Next month.

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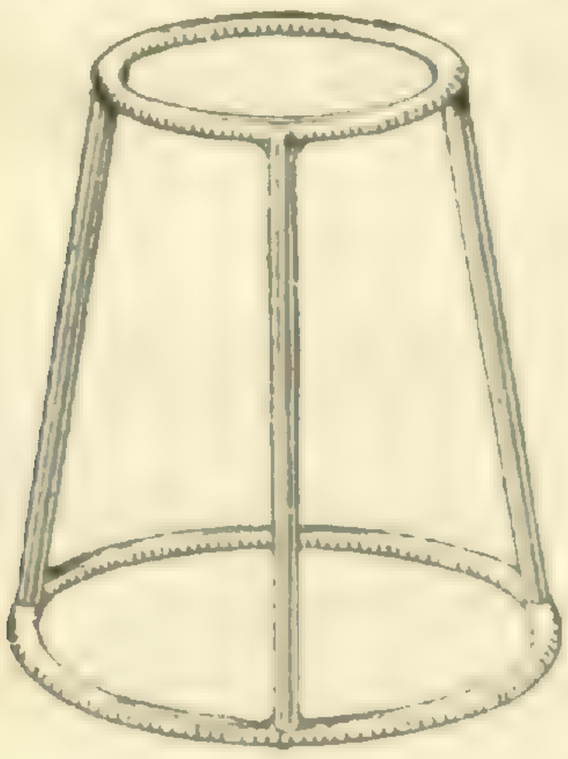

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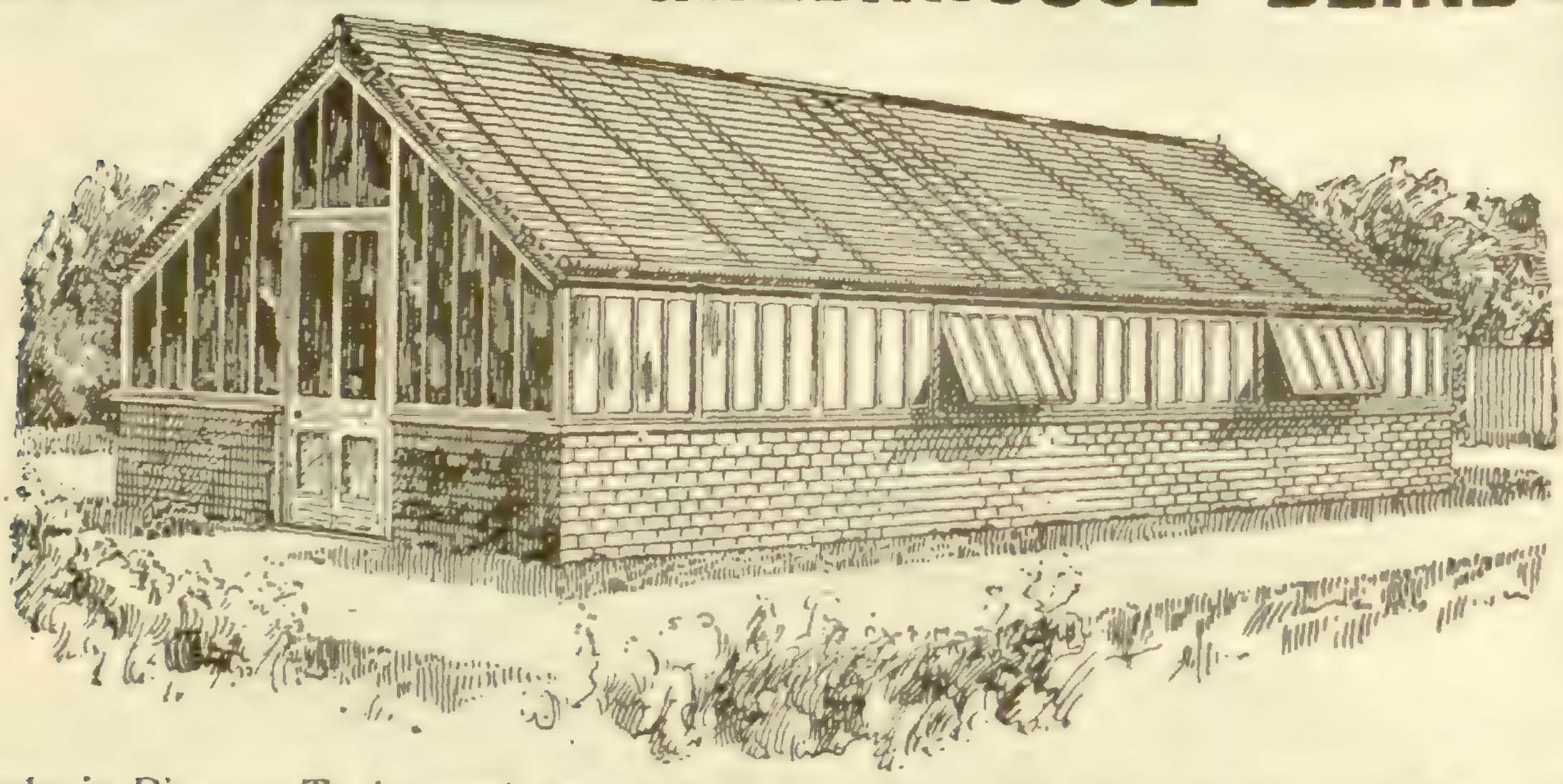

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An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *FEBRUARY*, 1907. [No. 170.

DIES ORCHIDIANI.

WE have not yet obtained a "scarlet" Odontoglossum crispum, but another milestone on the road towards that goal of the hybridists' ambition has been passed, for this popular Odontoglossum has now been united with the brilliant little Cochlioda Noetzliana, by Messrs. Charlesworth & Co., and the result was exhibited at the R.H.S. meeting held on January 8th, under the name of Odontioda Bradshawiæ, when the Orchid Committee marked their appreciation of its beauty by the award of a First-class Certificate. The plant bore a raceme of thirteen flowers, which are of a brilliant shade of "cinnabar-scarlet," and fairly intermediate in size and shape between those of the two parents. If it can be again combined with one of the numerous blotched crispums—and there seems no reason why it should not be done—the result should be remarkable, as the flowers would naturally have more of the crispum size and shape. Messrs. Charlesworth must be congratulated on their brilliant acquisition, which rivals the original Odontioda Vuylstekeæ in beauty, and if it improves as much as did that at its second time of flowering, it will be a sight worth seeing. It is the fourth member of this brilliant little hybrid genus, which bids fair to occupy a very prominent position in our collections in the near future.

The year is opening in a brilliant way for Odontoglossums, for we find a batch of seedling "blotched crispums" from Messrs. Linden described at page 27—one of which, by the way, is figured at page 57 of the present issue. Then we have the beautiful O. × Aliceæ, raised by Messrs. Bull from O. Edwardii and O. × crispo-Harryanum (see p. 41, fig. 5), and three handsome things from M. Ch. Vuylsteke, two of which received Awards of Merit from the R.H.S. at its last meeting, while the third is figured at page 48, and as numerous others are rapidly approaching the flowering stage the records of progress are likely to be written large over the year's doings.

Speaking of Odontoglossum × Aliceæ reminds me that it has received

the attention of the daily press, and I have two newspaper cuttings, one of which terms it the "Chameleon Orchid." It is said to have behaved in a very curious fashion on flowering. "The colour of the blooms," it remarks, "when the buds first opened was yellow; then they turned white, and finally became lilac, with deep violet blotches, these changes taking place within a fortnight. There are two unopened buds on the plant, which, no doubt, will begin their career as blooms in a yellow dress, and will go through the same extraordinary transformations as their companions." They also figure it, "in its third stage of lilac and deep violet." Perhaps another time they will arrange to show it in each of its three costumes. Another account describes it as "the most marvellous hybrid Orchid ever grown," and remarks that it has "altered its colour thrice." And it concludes :—"For a long time the Orchid growers have striven towards this end, and a fortnight ago the patience of the Chelsea firm was rewarded." And as we have just begun to introduce scarlet into the group, some interesting developments may be anticipated.

I was much interested in the summary of the Rules of Botanical Nomenclature adopted by the Vienna Congress (*O.R.* xiv. pp. 356-358), because of their bearing on the question of the Nomenclature of Hybrids, which has several times been discussed in these pages. It is notorious that the greatest diversity of practice exists, in spite of the R.H.S. Rules, and consequently we find the greatest amount of confusion. The *Gardener's Chronicle* in recent issues calls attention to these rules, and at page 42 remarks :—"It would be well if those raisers who now make a practice of applying Latin names to their productions, and thus causing unnecessary trouble, would study and act up to the letter of article 30, which enjoins the use of fancy names in ordinary language as different as possible from the Latin names of species and varieties." But article 30 relates to "Forms and half-breeds among cultivated plants," whose origin cannot be traced, and it is added : "When they can be traced back to a species, a subspecies, or a botanical variety, this is indicated by a succession of names—Example : Pelargonium zonale, Mrs. Pollock." The fact is this article does not apply to specific and generic hybrids at all, which are provided for in another rule, which has already been summarised, and instead of merely repeating that I prefer to give an example or two.

To begin with, hybrids are to be designated by a formula, or, whenever it seems useful or necessary, by a name. The formula is to consist of the names of the two parents in alphabetical order, connected by the sign ×. Thus we get the formulas Calanthe rosea × C. vestita, and Cattleya Mossiæ × Lælia purpurata. The signs ♀ and ♂ may be added if the seed

and pollen parents are known. Some hybrids are still only known by such a formula, but in these cases it was found useful or necessary to give a name. Now these Rules provide that such names are subject to the same rules as the names of species, but are to be distinguished from them by the addition of the sign × before the name. The adopted names of the hybrids just mentioned are, respectively, Calanthe × Veitchii and Lælio-cattleya × Canhamiana, and they agree precisely with these Rules, though given long before the Vienna Congress. And in what respect do they cause "unnecessary trouble?" Would "Calanthe Messrs. Veitch" or "Lælio-cattleya Mr. Canham" have given less trouble? It is just as well to get clear ideas on the subject, because we are all anxious to get at this system which will avoid unnecessary trouble. But it is not the use of the vernacular. The cause lies deeper than that. The hybrid between Cattleya Mossiæ and Lælia purpurata has over a dozen duly recorded names, extending over as many years, and several of them in the vernacular, but that does not lessen the confusion. And many vernacular names are a direct incentive to confusion, because some of its developments are utterly incongruous—the direct result of a wrong system.

It is very easy to point out what leads to confusion in nomenclature—I am speaking specially of hybrids—if it is difficult to suggest a remedy. The hybridisation of Orchids has now become a very popular pastime—nay, a great industry—and it frequently happens that a certain cross is made in different collections at about the same time, or flowers almost simultaneously in different collections. The raiser, perhaps with little opportunity of knowing all that has been previously recorded, gives a name, and exhibits the plant, when it gets recorded. It matters not whether the name is in Latin or in the vernacular, or whether intended as a provisional one or not, if the same hybrid has already been named, and the new name gets on record, the mischief is done, and is beyond recall. And when, as has frequently happened, different specific names are given to seedlings out of the same capsule, or to seedlings from different varieties of the same species—it matters not what those names are—further confusion is introduced. Another cause is the absence, through various reasons, of the record of parentage, or, what is much the same thing, an incorrect record. These are the causes of nine-tenths of the deplorable confusion which exists.

Where the vernacular system so often leads to confusion is the frequent use of specific names consisting of two or more words, for no such names should be given unless they can be joined by a hyphen. The point has already been discussed, and the incongruities to which it leads pointed out. The old system, so well exemplified in such names as Calanthe × Veitchii,

Dendrobium × Ainsworthii, Cattleya × Iris, &c., to which varietal names can be added without complication whenever necessary, is what the Vienna Congress recommends, and these rules should be as binding on horticulturists as on botanists. If they are loyally adopted we shall soon be able to answer a question which the *Gardeners' Chronicle* once asked—"Shall we ever have a universal language?"—in the affirmative.

I am very glad to see that the Vienna Congress adopts some of the very points which I long ago urged—or, to put it in another way, we have both urged the necessity of adopting a system of nomenclature for which we have to thank a long line of patient and clever men, and which can be understood throughout the civilised globe, which no mere vernacular system could accomplish. Let us not forget a very pertinent remark that the *Gardeners' Monthly* once made.—"VERNACULAR NAMES.—We have a suspicion that common names made all that trouble at the Tower of Babel." I will conclude by remarking that if raisers and others will ascertain what the Vienna Rules do require, and proceed to adopt them, it will be better for all concerned.

ARGUS.

HABITAT OF ODONTOGLOSSUM CRISPUM.

BY FLORENT CLAES.

THE habitat of Odontoglossum crispum extends over a considerable expanse of mountains, which can be divided into four regions, as follows:—

1. Fusagasuga.
2. Pacho.
3. Chiquinquira.
4. Velez.

1. FUSAGASUGA REGION.—This is already too well known for the very poor quality of the species found in it, the flowers being starry and without substance. The plants from this region are easily recognisable by their long pseudobulbs, generally bright green in colour, and very succulent; they become dull and wrinkled some days after collecting. O. crispum grows here in company with O. luteopurpureum, O. gloriosum, and O. Lindleyanum. Here one finds also O. Lindeni growing generally on the ground, on the mountain sides, among the grasses and small shrubs, but at a higher altitude than O. crispum.

2. PACHO REGION.—This is the grand region, producing the plants known in commerce under the name "Pacho type." Owing to its extended area, I have subdivided it into two divisions. The first is composed of the district properly called Pacho, and is isolated by the high plains of Facatativa and Lubachaqué. It comprises the group of mountains which stretch from Agua-Larga in the direction of La Vega, and from that last

locality towards a little village, of which the name escapes me, situated about midway between La Vega and Villeta, at which latter place O. crispum apparently entirely disappears. The type collected in this region is undoubtedly the most beautiful which exists; its robustness, the great beauty, and the texture of the flowers, placing it in the first rank. Unfortunately, these mountains do not extend far, and the unscrupulous manner in which they have been exploited during the last few years has rendered it very difficult to find even a few hundred plants a year there.

The second district is the principal one, and comprises the villages of Lupata, Vergara, San Cayetano, and Veraguas, and having Pacho for centre. At the time of Funck and Schlim, O. crispum abounded here in the woods, which then descended to the foot of the mountains, even as far as the village of Pacho. At the present time, the majority of the forests which surrounded this smiling spot have been cut down to make room for pasture lands or for maize or tobacco plantations. Even in 1880, O. crispum, in the immediate vicinity of Pacho, had become extremely rare, and, in order to procure it, it was necessary for the "parasitoros" to penetrate farther into the mountains and search round the other villages situated at a higher altitude. The natives, instead of returning every night with their spoils, as at the time when the species grew in abundance near the village, were obliged to carry provisions for a week. They would set out on the search for plants on a Monday or Tuesday, not returning until the Saturday following, with the load that they had been able to collect. Besides the real beauty of the flower, both in shape and texture, there is another characteristic distinctive of the Pacho type, and that is, that as a general rule, the flower stalk, which is slightly curved, carries its flowers touching each other in two parallel lines. This gives a most beautiful aspect to the plant. I have rarely observed this feature in plants coming from the forest regions farther to the North. Here the flower stalks are longer and the flowers more distant from each other.

In the two districts of the Pacho region, O. crispum generally grows in company with those two most widely diffused species, O. gloriosum and O. Lindleyanum. However, in the mountains of Lupata I have collected O. × Wilckeanum, var. Mme. Florent Claes, and I once saw, at the house of a resident of Pacho, several fine forms of the same hybrid, which had been found near the village. This seems to point to the existence of O. luteopurpureum in this district. Still, I must admit that I have never met with a plant of it here. Among the other species found, I must mention a single plant of O. Hunnewellianum found in the mountains of San Cayetano, and O. Wallisii, which grows in moderate quantity in one part of the mountains stretching from Pacho in the direction of Ubaté.

(To be concluded.)

SOPHRONITIS AND ITS HYBRIDS.

SOPHRONITIS consists of a small group of plants, for the most part native of Brazil. The finest of the genus is S. grandiflora, which produces a brilliant scarlet flower, from two to three inches in diameter, being very large when we compare them with the whole plant, which does not exceed four inches in height. There are two or three varieties. The one called rosea is a clear rose pink, with rather shorter bulbs and smaller flowers; purpurea is larger, and the flowers are carmine purple. Two other species in general cultivation are S. violacea, which is violet-magenta, and S. cernua, a small flowered plant, having cinnabar-red blooms. These little plants are easily grown, occupying a small amount of space, and make a bold show through the dullest months of the year. They thrive either in the cool house or among the Cattleyas, if suspended in well-drained pans about eighteen inches from the glass: but the importance of S. grandiflora is the fact of it being one parent of a series of beautiful hybrids.

SOPHRONITIS HYBRIDS.

One Sophronitis hybrid, which stands out from all the rest, is Epiphronitis Veitchii, a cross with Epidendrum radicans. The difference between the size of the parents is remarkable, the Epidendrum being six feet to seven feet high, and it was also the pollen plant. However, its influence is unmistakeable, and the hybrid is much dwarfed, attaining a height of from one to two feet. The flowers are increased in size, and are darker in colour than E. radicans. This plant succeeds best in pots, and may be grown on the stage or suspended; if the latter method is adopted, fairly deep pans may be used instead of pots. An intermediate temperature should be provided, and when in full growth a gentle spray overhead occasionally will assist the plants and help to keep in check insect pests. Thrips are very troublesome, and a sharp look out is necessary at all times. The stems produce a lot of side shoots, which must be taken off and made up into separate neat little specimens, when the stock maintains a clean and healthy appearance. If this is not done they become shrivelled and starved, because the roots are too far off to get any nutriment from the compost. It flowers at different periods, but usually in the autumn, when the spikes are cut off. The plants should only be kept just moist until spring, and about this time the repotting is done, pulling the plants to pieces, and potting them up into the desired sized pot, or just taking off the top shoots and leaving the old plant until later.

The other hybrids from Sophronitis bear a more or less similarity, but they are decided acquisitions, their rich colour and convenient size rendering them most suitable for buttonholes. Several are as yet extremely rare; Sophro-cattleya Queen Empress, the result of crossing C. Mossiæ, is

one. Several other Cattleyas have been crossed with Sophronitis, but two that are easily procured are S.-c. eximia and S.-c. Chamberlaini. The former was raised from C. Bowringiana, and the latter from C. Harrisonæ. The latter is very handsome, the colour being a brilliant rose-purple, with a little yellow in the throat of the lip.

The following Lælias have also been crossed:—? Dayana and L. Schilleriana, which gave us Sophrolælia læta and Veitchi respectively. Both are exquisite little plants; and some varieties, such as Orpetiana, are very rich in colour. Once these plants are raised, little difficulty is experienced in growing them. They should be accommodated in the Cattleya house, and may be hung about two feet from the glass, or arranged on the stage if there is room, the latter preferable. Well-drained pans are best, and ordinary compost should be used. If proper attention is paid to watering, the result will be a few well-grown plants, which are not excelled (considering their size) by any other group of Orchids.—T. ANSTISS, in *Journal of Horticulture*.

THE HYBRIDIST.

BRASSOLÆLIA LOUIS-BEL.—This is a charming hybrid raised by M. F. Denis, Balaruc les Bains, Herault, France, from Lælia Boothiana ♀ and Brassavola Digbyana ♂, and now flowering for the first time. The flower is fairly intermediate in shape and has an expanse of nearly seven inches across the petals, while the colour is brighter than in most other Digbyana hybrids, being of a pretty shade of lilac-rose. The lip is over two inches across, and very prettily undulate and fringed, the radiating nerves being darker than the ground colour—a character which applies to other hybrids of Lælia Boothiana. The disc is white, with some purple veins at the base. The petals are half an inch broad. M. Denis writes that the plant is small at present, and should improve when it becomes stronger.

BRASSOCATTLEYA PLUTO.—A flower of this remarkable hybrid, which received an Award of Merit from the R.H.S. on January 8th, is sent from the collection of Major Holford, Westonbirt, by Mr. Alexander. It is derived from Cattleya granulosa ♀ × Brassavola Digbyana ♂, and has almost reproduced the shape of the former, the front lobe of the lip having a long broad unguis, but the side lobes are enlarged to 2¼ inches long, and are slightly fringed, a character more strongly developed in the front lobe. The sepals are light coppery green, the broad petals paler, and the side lobes of the lip white, while the front lobe is veined with crimson-purple and the isthmus stained with the same colour.

LÆLIO-CATTLEYA × WOLTERIÆ.—A distinct and very pretty hybrid, raised from Cattleya Loddigesii ♀ × Lælia anceps ♂, has just flowered

with M. Paul Wolter, of Magdeburg-Wilhelmstadt, Germany, and the flower with photographs have been very kindly forwarded. The plant is most like the Lælia parent in habit, the scape being somewhat elongated, and covered with equitant bracts. The pseudobulbs are two-leaved. The flower is fairly intermediate in character, the sepals and broad petals being rose-pink in colour, and the lip somewhat three-lobed, prettily undulate, and white in colour, with a rosy purple apex, and some light reddish purple radiating veins on the disc. One of the photographs sent shows the habit, and the other includes a flower of each parent, giving a very graphic presentment of the way their characters are combined in the hybrid. It is dedicated to Frau Selma Wolter.

ODONTIODA BRADSHAWIÆ.—A striking and brilliantly-coloured hybrid, raised by Messrs. Charlesworth & Co., Heaton, Bradford, from Cochlioda Nœtzliana ♀ and Odontoglossum crispum ♂, and exhibited by them at the R.H.S. meeting held on January 8th, when it received a First-class Certificate from the Orchid Committee. It bore a spike of thirteen flowers, most like those of the Odontoglossum in shape, but reduced in size. The prevailing colour of the sepals and petals is a shade of cinnabar-scarlet. The lip is free, three-lobed, with a whitish ground colour, and a scarlet area at the apex of each lobe, and one in front of the yellow crest. It is a brilliant acquisition.

ACACALLIS CYANEA.

THIS is one of the few so-called blue Orchids, and a remarkably handsome plant, though, unfortunately, very rare in cultivation. It was originally described by Lindley, in 1853 (*Fol. Orch.* Acacallis), from specimens collected on trees by forest streams on the Rio Negro, by Spruce. It did not appear in cultivation till nearly thirty years later, but in 1882 it was sent to Reichenbach by Mr. W. Gray, gardener to Erastus Corning, Esq., of New York, and in 1885 it flowered in England, in the collection of Walter Holland, Esq., of Liverpool. The plant had been collected in the Rio Negro district by Bungeroth, when collecting for the Liverpool Horticultural Co. The plant has now been redescribed and figured as a new genus, under the name of Kochiophyton negrense, Schlechter (ex Cogn. in *Mart. Fl. Bras.* iii. pt. 6, p. 574, t. 119), from materials collected on tree trunks at Cabeceira, on the Rio Tiquié, a tributary of the Rio Negro, by Dr. Th. Koch. Prof. Cogniaux inserts the plant in the Addenda between Colax and Zygopetalum, but in the body of the work he has correctly placed Acacallis cyanea, Lindl., next to Aganisia, to which it is very closely allied. Aganisia tricolor, N.E.Br. (in *Lindenia*, i. t. 45), is a form of the same species.

R. A. ROLFE.

ODONTOGLOSSUM × ALICEÆ.

WE have much pleasure in illustrating another handsome hybrid from Odontoglossum Edwardii, which has been raised by Messrs. William Bull and Sons, Chelsea, to whom we are indebted for the photograph. It was obtained by crossing the species named with the pollen of O. × crispo-Harryanum, the date being May 5, 1902. The seed was sown on July 14 of the following year, and the first flower expanded on December 12, 1906, when the seedling was under three and a half years old. It has now passed into the collection of J. Gurney Fowler, Esq., S. Woodford, who exhibited it at the R.H.S. meeting on January 8th, when it received an Award of Merit. It recalls in some respects the handsome O. ×

Fig. 5. ODONTOGLOSSUM × ALICEÆ.

Thompsonianum, figured at page 241 of our thirteenth volume, but the violet-purple blotches do not monopolise quite so much of the segments as in that, while the ground colour is yellow when the flower first opens, gradually changing to white. The yellow is evidently due to the influence of O. Harryanum. It is a very bright and attractive flower, and is evidently not yet fully developed, as the first inflorescence bore only three flowers.

Messrs. Bull have made an excellent start in raising Odontoglossums, for they send another photo showing a house with row after row of seedlings in various stages, there being about twelve hundred altogether, Odontoglossums and Odontiodas. The one figured is the first to flower,

and is one of those mentioned at page 347 of our eleventh volume. We then alluded to the seedling Odontoglossums—"a very interesting lot in quite a small light house. Some were germinating on the compost of the old plants, others had been pricked off into pans, and yet others had been potted into tiny pots and had several small leaves. They were from severa crosses and looked quite thriving." This is remarkable progress in about three years, and as Mr. Lakin had only taken charge of the collection two years previously he must be congratulated on such marked success—and almost in the heart of the London fog area. too. The next few years may witness a remarkable development, and as the records are kept, and the plants carefully labelled, we may anticipate some valuable results.

CALENDAR OF OPERATIONS FOR FEBRUARY.

By W. P. Bound, Gatton Park, Reigate.

The Orchid grower can now conclude that the quiet season is past, and activity will be necessary if one intends to meet the work, and be ready for it as the season advances. The best results are always attained by doing work at precisely the right time, and in no part of a garden is this more true than in the Orchid houses. The grower should see that he has a good supply of peat, loam, sphagnum, sterilized rhizomes, leaf soil, small crocks about the size of peas, pots, pans, sand, labels, and stakes, so that when they are wanted they are all at hand and ready for use. I would like to mention that in using rhizomes as a drainage medium it is of the greatest importance to know that they are thoroughly sterilized, and they can now be obtained ready for use already chopped up. It is a most mistaken policy to use those saved at home, unless they have been well baked, as a very little sap left in the rhizomes oftentimes sets up a most detrimental fungus, necessitating the repotting of the plant at perhaps an unfavourable time for its well being. For the drainage of most Orchids we are now generally using rhizomes in conjunction with a few crocks, and we find that the roots ramify amongst them freely, yet they do not adhere to them like they do to the crocks, and consequently when the time comes for repotting, the roots are less damaged in working away the drainage and old compost.

If the blinds on the various houses have been taken down during the winter months they should now be got in readiness for use, and be placed on the houses containing plants that do not require much direct sunshine; I do not favour allowing shade-loving plants to have much sunning in the early spring. It can be taken for granted that from now onwards there will be ample light to prevent them becoming soft and drawn, and towards the latter part of this month we often get clear and bright days, when the

mid-day sun is too strong to have a good effect on many Orchids. I have seen Odontoglossums lose many leaves that could well have been saved if some shade had been afforded during the latter part of this month. I am not, and never was, a believer in coddling Orchids: they speak to us if we only observe, and when one can see leaves going off freely it is for us to ask ourselves what it is they want, and if they ask for protection from strong sunshine give it them, irrespective of date. So much depends on the situation and elevation, and I am sure that we get stronger light in February than those near large towns get in March, so that each grower must meet his own requirements.

Many spikes will be in evidence now in the Odontoglossum house, and traps of bran laid on small pieces of cardboard, orange peel, or lettuce eaves should be placed nightly and inspected for slugs. Should the houses be badly infected, place a piece of cotton wool as close to the base of the spike as possible. This is a good preventative, but I prefer to catch them, for besides eating the spikes they do perhaps even more harm in devouring the young roots as they are being emitted from the new growths. Any plants showing spikes that have not made good growth should have the spike removed, as it is when the plant is on the down hill road and is allowed to carry a flower spike that generally makes it such a wreck, entailing several years of culture to make it once again presentable: yet if it had been given a rest from flowering for one year at the right time it would most probably have recouped itself.

In the warmer houses woodlice are often great pests, but hollowed-out halves of potatoes laid on the pots and gone over night and morning will trap large numbers. It is also most essential that cockroaches be kept down, otherwise they will prove a source of great trouble. I find the best way is to change the poison used from time to time. We generally have three sorts going, which are changed periodically, and unless the pests are very numerous, placing it about once or twice a week will suffice, but should there be a regular plague of them, put it down each evening, changing the sort used frequently.

Fumigating should be followed up very regularly. It is a great mistake to wait for this till thrip is in evidence, for prevention is far better than cure, and the ultimate cost, I am sure, is no greater. I like to fumigate each house, with the exception of the Odontoglossum house, about every two weeks, but unless we are driven to it we do not like fumigating the Odonto. house, and spraying with a weak solution of Quassia extract frequently makes the leaves very distasteful to thrip, and used properly has no detrimental effects on the plants.

INTERMEDIATE HOUSE.—In this structure many plants will be found requiring attention. Perhaps the principal will be that fine species,

Cypripedium insigne and its many varieties, most of which will now be out of flower, and should they require re-potting, dividing, or resurfacing, the present month is a most opportune time to carry it out. To get the best results from these it is essential that the compost should be of a retentive nature, such as one made up of loam 3 parts, to one part each of peat and leaf soil, mixed together with a fair amount of small crock and coarse sand. If the loam is of a very heavy nature some of the soily parts should be removed, and each of the soils should be in a nice humid state. It is impossible to pot well if the soil is overcharged with moisture. The receptacles should be one-third filled with crock and rhizomes, over which should be placed some lumps of good fibrous loam, to prevent the fine particles in the compost working down among the drainage. Pot moderately firm, keeping the compost low enough to allow of a surfacing of chopped sphagnum, the top of the moss being rather below the rim of the pot.

The grower should remember that if a good stock of plants and specimens is to be maintained in full vigour, some of the larger and crowded plants should each year be pulled to pieces, and given a fresh start. When a few are thus treated annually there are always some that only require potting-on to take the place of the ones broken off; in fact they should go in stages till they get to the top. When they become very overcrowded in the centre, even if it is possible to pot them on, the centre portions get little benefit from the new material, and they soon show a deterioration in the quality of the flowers, so that when it is desirable that the same plant should remain as a specimen, it should be carefully pulled to pieces and remade, using the outer portions of the plant; the centre may thus be broken up into smaller pieces and potted into small pots for stock. In re-making a specimen, so place the pieces that they each have room for development centrewards as well as outwards, and then it will go for two or three years without disturbance, beyond an annual resurfacing. All plants that do not require repotting will be benefited by having the surface material removed and replaced with new. We surface with chopped sphagnum, and when this is used, resurfacing is very little trouble.

After potting, watering must be done very carefully indeed. With such plants as these, that are known to be very free and easy to cultivate, one is apt to think that such care is not necessary, but it is, especially for a month or two after they have been disturbed. I do not mean to say an extra watering when they do not need it is going to kill, but it is the highest point of culture that we should aim at, and to reach that end every detail must be considered from first to last. Frequent dampings between the pots will be helpful, and if the house is of a dry nature, a light spraying on bright days may be given, and as the days lengthen and become brighter

overhead spraying may be done daily, slightly at first, increasing the amount as the season advances. The atmosphere of the house should always be a humid one. In dividing, there will be sure to be some pieces that have very little root, and these can be best treated if they are placed together, and kept well sprayed and shaded from direct sunshine. With such numerous fine varieties as we now have, they make a good collection in themselves, producing such long-lasting flowers that they maintain a house in a gay state from October till the end of January.

As soon as the potting of the Cypripedium insignes is accomplished, C. × Leeanums may be taken in hand, and we find that these can be treated in precisely the same way as C. insigne. These are, perhaps, the two most grown at the present time for giving flowers during the winter months, but the fine hybrids that are now being frequently seen between the two, known under the name of C. × Actæus, bid fair to become quite as popular. Many others that have the blood of C. insigne in them will be found to grow freely in the compost I have given, and should be treated in the same way.

CYMBIDIUMS giganteum, Tracyanum, and the pleasing hybrid C. × Winnianum will now be in a sufficiently advanced state in growth to allow any necessary potting being done, using a compost of two parts good fibrous loam, and one part leaf soil, mixed with a liberal sprinkling of small crocks and course sand to ensure the porousity of the compost. Cymbidiums when growing freely are gross feeders, and soon exhaust the material unless it is of a strong retentive nature. Afford a thorough drainage of crocks, using them as large as possible. It is sometimes thought that plants, such as Cymbidiums, that require copious supplies of water when growing, are not so particular as regards drainage, but I consider it is of even more vital importance towards ultimate success to see that such plants have a good drainage, than it is to those we know will only be watered when they become well dry. Another thing, with such a compost as this is that it is much more apt to clog the drainage, unless some pieces of turfy loam, having most of the fine particles taken from it, are placed over the crocks. Pot moderately firm, keeping the compost below the rim of the pot.

Specimen Cymbidiums are fine objects, and wherever room can be given them the grower should endeavour to always have some. To maintain a number in vigorous condition, some should be divided each year, and then a young healthy specimen will always be ready to take the place of one that is beginning to show signs of exhaustion. When an old specimen is divided, it must not be supposed that it will be in a good state to produce and carry flower the first season, and that is my reason for suggesting doing some each season.

CYPERORCHIS elegans and C. Mastersii will be ready for potting towards the end of the month, and the same compost is suitable, but I prefer keeping these in small pots. They are much more effective when grown in pots about six inches in diameter. Where a house is not devoted to Cymbidiums, no better position can be given them than one in the Odontoglossum house, choosing the coolest end.

The beautiful Cymbidium grandiflorum is now in flower with us. With many it is notorious for dropping its buds, but so far we have never had any trouble in developing the spike, when grown with the other varieties where the temperature of the cool house is maintained. I rather fancy the difficulty in developing spikes is caused by the want of light. We have at Gatton a strong light, yet we always place our plants after the spikes have begun to run out in such a position that they get full advantage of all light obtainable. I have noticed when we have had a plant in flower in January the pollen is seldom developed, yet the pollen always develops on those that come later. I think that goes to prove that it is the lack of light which causes the flower buds to turn yellow and drop, oftentimes when they are nearly ready to burst. This variety may be potted as soon as the young growths have made a fair start. We use the same compost as given for the other forms.

Cymbidium eburneum and C. Lowianum are now developing their spikes, and likewise the beautiful hybrid eburneo-Lowianum and the reverse cross. Plants in vigorous health and carrying many spikes will need much water. At this season it is well to be on the look-out for red spider, as it is often found now, especially after a sharp period when a good deal of fire heat has been used, and no syringing has been possible. Disfigurement of the foliage is soon caused, which will stare one in the face for a long while. A mixture of soft soap and flowers of sulphur is the best preventative or cure I have ever heard of for this pest. To make this, half fill a jam jar with the sulphur, and fill it up with soapy water, stirring it from time to time till it is in paste form. It thus mixes for sponging purposes much better. A tablespoonful of the sulphur paste and about 1oz. of soft soap to a gallon of water will prove effective in eradicating red spider.

ZYGOPETALUM.—The varieties intermedium, crinitum, and Mackayi will by now be ready for potting, using the same compost as given for Cymbidiums. For these the pots should be half filled with crocks, it being most desirable that they dry very quickly after water is afforded during the winter months: in fact at no time do they like to lie for any length of time in a wet state. After potting, afford water only when the compost has become well dry. When a plant is being potted, unless it is a vigorous young plant, see that all the useless old bulbs are removed. I like to take away all that have no leaves. A position in the Intermediate house is very

suitable, choosing the coolest end. The black spotting on the foliage so frequently seen is, I believe, bred by keeping the plants in too wet a state during the winter months, or by growing them in a stagnant atmosphere away from light. It is important that a light position be given them during the dark dull days, and they always enjoy a fair amount of light. Flowering with these during December and January was Zygocolax Veitchii, a charming hybrid which may be treated in precisely the same way.

HYBRIDISING ODONTOGLOSSUM CITROSMUM.

IN the last issue of the *Orchid Review* (p. 16) I said a few words about the hybrids of Odontoglossum Rossii. Now I shall pass some remarks on the hybridisation of O. citrosmum, another very interesting and striking species on account of the pendulous habit of its flowers, which are nicely scented in the morning. Their texture and period of flowering makes them very valuable for cutting.

Some growers say that this lovely species is not free blooming, but I can answer that this reproach is altogether erroneous if the plants are grown in a proper house, with the treatment recommended in the *Review*. I have myself always flowered 80 per cent. of my plants every year. On looking through, some time ago, Sander's *List of Orchid Hybrids* I was surprised to find no record of any crosses from O. citrosmum, but I think some very pretty things might be raised from it.

I tried many times to hybridise it, and I observed that after a short time the very thin and slender spikes became rotten, and the promising seed-pods turned yellow, when the seeds, of course, were not good. I then thought that perhaps I should be more successful without wiring the spikes, and I also used to spray round more frequently than before, after which I had a few good seed-pods on it. It is much easier to hybridise another Odontoglossum with the pollen of this species, and some nice plants of Cochlioda Nœtzliana crossed with pollen from O. citrosmum roseum are very promising. I should be glad to know if any other readers of the *Review* have been so successful. P. BOPPE.

[We have up to the present no record of either a natural or artificial hybrid from O. citrosmum, and it is so distinct from every other species in its pendulous spikes that it is difficult to imagine what a hybrid from it would be like. But there seems no particular reason why it should not be successfully crossed, as several very distinct combinations have already been made, and the difficulty of raising seedling Odontoglossums has now been overcome. We should like to hear the result of any other experiments that may have been made.—ED.]

ODONTOGLOSSUM × BEAUTE-CELESTE.

WE have received from M. Ch. Vuylsteke a photograph of the beautiful Odontoglossum described at page 26 under the provisional name of O. × armainvillierense, together with a note as to its origin. The photograph is here reproduced natural size. It has received the name of O. × Beaute-Celeste. M. Vuylsteke writes:—"I think this Odontoglossum has nothing to do with O. × armainvillierense, because it has not the same parentage. It comes from a crossing of a fine large O. crispum, the old Pacho type, and a fine O. × ardentissimum. The plant of which I sent you the flower

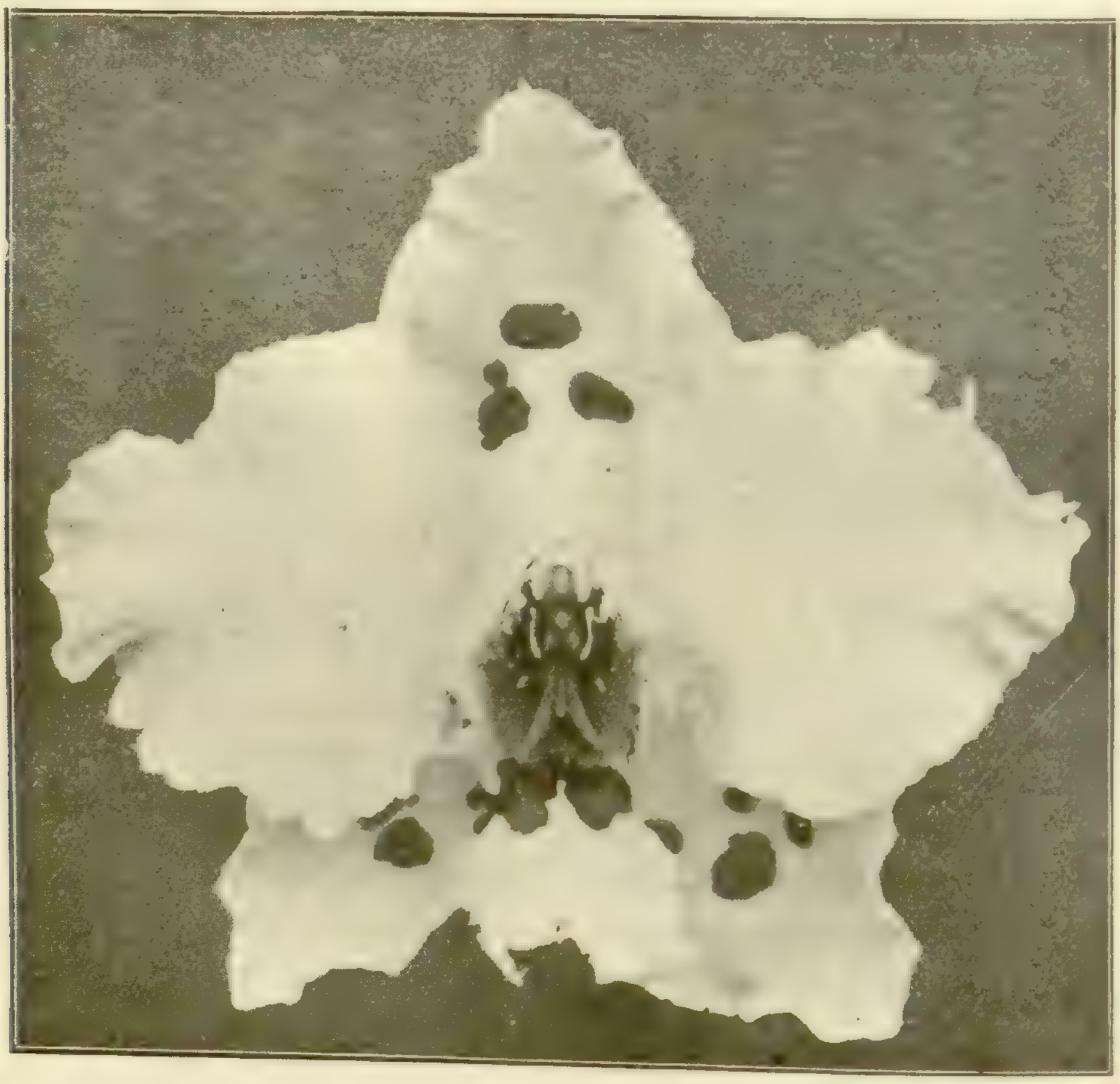

Fig. 6. ODONTOGLOSSUM × BEAUTE-CELESTE.

is only three and a half years old, and is a small plant with two bulbs. In the same batch of seedlings I have also had some fine red spotted varieties, but the greater part are much inferior to their parents." The above came after the flower, and consequently too late for our last issue, but it explains the influence of O. Pescatorei to which we alluded, though it now appears that it is a secondary hybrid, in which O. Pescatorei is only represented to the amount of one-fourth. We need not repeat the description, but we think the illustration justifies M. Vuylsteke's remark that it is the best in form which he has ever seen. It may be added that the original O. × armainvillierense, according to the record, is half crispum and half

Pescatorei, which explains why O. × ardentissimum is considered as a form of the same hybrid. It would be interesting to see the amount of variation between the different seedlings obtained from this cross, if M. Vuylsteke could send them.

SOCIETIES.

ROYAL HORTICULTURAL.

THE first meeting of the new year was held at the Royal Horticultural Hall, Vincent Square, Westminster, on January 8th, when there was a good display of Orchids for the season, and the meeting was distinguished by the appearance of a striking new hybrid between Cochlioda Nœtzliana and Odontoglossum crispum, for which Messrs. Charlesworth received a First-class Certificate under the name of Odontioda Bradshawiæ. Four Awards of Merit and two Medals were also given.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), exhibited Cypripedium × aureum Hyeanum, C. × a. Œdippe, having a purple dorsal sepal with white apex, C. × illustre (Lathamianum × nitens), C. × Vandyck (hirsutissimum hybrid × Mons. de Curte), having a dark rose dorsal sepal edged with white, Brassocattleya Madame Hye, Westfield var., a very handsome form, B.-c. × Pluto (C. granulosa ♀ × B. Digbyana ♂), a striking thing, most like the Cattleya in shape and colour, but with the front and side lobes of the lip fringed (Award of Merit), and Cattleya × Maggie Raphael var. alba (Trianæ alba × Dowiana aurea), a charming thing, having white sepals and petals and a rose-coloured lip veined with yellow (Award of Merit).

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), received an Award of Merit for Phaiocalanthe Colmanii (Phaius × Norman × Calanthe Regnieri Stevensii), a beautiful white flower with some purple lines at the base of the lip.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), received an Award of Merit for Odontoglossum × Aliceæ (Edwardii × Harryano-crispum), a strikingly handsome hybrid which is described and figured at page 41. He also sent Cypripedium × Ernest Read (× Wm. Matthews × callosum Sanderæ), a large and well-shaped flower, white, tinged with rose, and the dorsal sepal lined with green.

J. Foster Alcock, Esq., Exhims, Northchurch, sent Cypripedium × Chapmanii, Exhims' var., a large and densely spotted form, and C. Charlesworthii, Exhims' var.

J. H. Craven, Esq., Beeches, Keighley, Yorks. (gr. Mr. Corney), sent Cypripedium × Helen II., Craven's var. (insigne Sanderæ × bellatulum), a pretty white flower spotted with purple, with the lip sulphur yellow.

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De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent a fine example of Odontoglossum crispum Poultoni, having white flowers well blotched with purple.

Reginald Farrer, Esq., Clapham, Lancashire, sent Cypripedium × Phaedra, Ingleborough var.

M. Jules Hye de Crom, Ghent (gr. M. Coen), sent Cypripedium × Lathamianum imperatum, a remarkably fine and well-shaped flower.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), sent the distinct and pretty Pleurothallis punctulata, with cut spikes of other interesting Orchids.

J. Wilson Potter, Esq., Elmwood, Croydon (gr. Mr. Young), sent a pretty orange-coloured hybrid between Lælia cinnabarina and L. Jongheana.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium × Æson giganteum, a large and handsome form, C. tonsum, Westfield var., C. callosum giganteum, C. insigne Laura, with heavily-blotched dorsal sepal, C. × Niobe-Leeanum, and C. × Minnie.

Gurney Wilson, Esq., Glenthorne, Hayward's Heath, sent Odontoglossum Rossii Wilsoni, a pretty form, heavily spotted with reddish brown on the sepals.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very fine group, consisting mostly of hybrids, to which a Silver Flora Medal was given. It contained several plants of the handsome Cattleya × Octave Doin, Lælio-cattleya Andromeda, L.-c. Lydia, with various other Cattleyas, Lælio-cattleyas, and Brassocattleyas, a beautiful series of Odontoglossum × Rolfeæ, showing much variation in colour, O. × Othello, O. × Phœbe in very fine condition, several examples of the beautiful Trichopilia suavis, a well-flowered T. brevis, Saccolabium giganteum, Lælia × Gouldiana, and other fine things. The centre of attraction, however, was Odontioda × Bradshawiæ, a very handsome hybrid from Cochlioda Noetzliana ♀ and Odontoglossum crispum, to which a First-class Certificate was given. It is a plant of dwarf habit, and bore a spike of thirteen flowers, most like the Odontoglossum in shape, but suffused with cinnabar-scarlet, and the lip three-lobed and whitish, with a scarlet area at the apex of each lobe, and a similar blotch in front of the yellow crest.

Messrs. James Cypher & Sons, Cheltenham, received a Silver Banksian Medal for a fine group, including good forms of Cypripedium insigne and C. × Leeanum, C. Fairrieanum, C. × vil-exul, C. × Charlesianum Cypher's var., and other hybrids and species, Lælia anceps varieties, examples of Masdevallia × Hincksiana, Dendrobium aqueum, D. × Ethel, D. Phalænopsis, and other good things.

Messrs. Heath & Sons, Cheltenham, sent a series of hybrid Cypripediums,

including C. × Leeanum, C. × Swinburnei magnificum, C. × Mons. de Curte, and others, with Cattleya Percivaliana, and a dwarf rose-purple hybrid raised from C. Harrisoniana and C. Walkeriana.

Messrs. Linden, Brussels, sent two handsome seedlings of Odontoglossum crispum, O. c. eminatum, described at page 27 of our last issue, and O. c. coloratum, a larger form having rich purplish red flowers margined with white, and narrow whitish lines between the large blotches.

Messrs. Hugh Low & Co., Enfield, staged a very interesting group, including Lælia autumnalis and its chaste variety alba, Warscewiczella velata, a nearly white Dendrobium Phalænopsis, Cypripedium insigne Sanderæ with five flowers, C. i. var. E. J. Seymour, C. i. Lucianianum, a greenish-yellow form bearing three flowers; C. × Maudiæ, C. × aureum virginale, C. × Leeanum Clinkaberryanum, C. × Adrastus Mariæ, and others.

M. Maurice Mertens, Mont St. Amand, Ghent, sent a pretty little group, containing the handsome Brassocattleya Digbyano-Mendelii, a good Cattleya Trianæ and var. delicata, Miltonia × Bleuana grandiflora, Cypripedium × Lathamianum Rex, the greenish yellow C. insigne Hyeanum, and others.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, sent a small group of Cypripedes, including C. × Deedmanianum, C. × Calypso, C. × Clio giganteum, C. × Fowlerianum magnificum, a fine richly-coloured form, C. × Black Empress, very dark in colour, and others.

Messrs. Sander and Sons, St. Albans, sent three fine plants of the handsome Vanda Sanderiana.

Mr. H. A. Tracy, Twickenham, sent Cypripedium × xanthinum (× Leeanum × insigne Furzeanum), a good yellow form, heavily spotted with brown on the dorsal sepal and petals.

AT the meeting held on January 22nd there was a very fine display of Orchids, and no fewer than eleven Medals were awarded, besides five Awards of Merit and two Cultural Commendations.

F. Du Cane Godman, Esq., South Lodge, Horsham, staged a group of beautifully grown and flowered specimens of Lycaste Skinneri, including one of the chaste variety alba with nine flowers, with some equally well-grown examples of Maxillaria grandiflora at each end, a Silver Flora Medal being awarded, while the Maxillaria secured both an Award of Merit and a Cultural Commendation.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), also received a Silver Flora Medal for a very beautiful group, including about sixty cut spikes of Lælia anceps with an aggregate of about 150 flowers, prominent among them being the varieties Schrœderiana, Sanderiana, Ashworthiana and Stella. There was also a fine specimen of

Cattleya Percivaliana bearing 26 richly-coloured flowers, Lælio-cattleya Ariel (L. Cowani × C. Dowiana aurea), with orange-coloured flowers, and Cypripedium × Moloch (Charlesworthii × Euryades), having a purple dorsal sepal tipped with white.

G. Singer, Esq., Coundon Court, Coventry (gr. Mr. Collyer), received a Silver Banksian Medal for a small group, including cut spikes of Phalænopsis × Lady Rothschild (× intermedia × Sanderiana), P. × intermedia and its variety Brymeriana, Cypripedium × aureum var. Surprise, varieties of Cattleya Trianæ, and others.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), received an Award of Merit for Cypripedium × Tautzianum nigricans, a remarkably dark form, having a ruby red dorsal sepal, lined with claret-brown and narrowly margined with white, rose-purple petals, dotted with chocolate brown, and a claret-coloured lip. He also exhibited C. × Cassandra, Westfield var., a very handsome form, C. × Euryades Miss Edith O'Reilly, and Brassolælia × westfieldiensis (B. glauca × L. flava), having white flowers, slightly tinged with green, and the lip three-lobed and crisped.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), sent Odontoglossum crispum Theodore Pauwels, a handsomely blotched form which was figured at page 184 of our thirteenth volume. Calanthe × Gildenii, a large purplish rose form with a claret-coloured lip, C. × Phœbe, soft pink, C. × Sibyl, pure white, Cattleya × Chapmanii (× Hardyana Oakwood var. × Trianæ), with dark rose sepals and petals, and a crimson-purple lip veined with gold at the base, Cypripedium × Orion var. bellum, and C. × Mary Amelia (bellatulum × Lord Derby). A Cultural Commendation was given to a fine specimen of C. × Leeanum Clinkaberryanum.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), sent Cattleya × Miranda Gatton Park var., a pretty rose-coloured form, with a purple front to the lip.

Malcolm C. Cooke, Esq., Kingston Hill (gr. Mr. Buckell), sent Odontoglossum crispum with a branched spike.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), sent Masdevallia melanopus and Cypripedium × Buchanianum magnificum.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent Lycaste × Balliæ Rosslyn var.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), sent the handsome Odontoglossum × Thompsonianum (Edwardii × crispum) with claret-purple flowers margined and tipped with rose. It is figured at page 241 of our thirteenth volume.

M. Ch. Vuylsteke, Loochristi, Ghent, received a Silver Flora Medal for a small group of choice Odontoglossums, with a good specimen of

Cymbidium × Holfordianum. The Odontoglossums included the handsome O. × ardentissimum, O. × percultum, the richly-coloured O. × Vuylstekeæ (figured at page 361 of our thirteenth volume), O. crispum Talma, a prettily spotted form, and others. Awards of Merit were given to O. × Ruby (parentage unknown), having the sepals and petals lilac, heavily blotched with claret-purple, and the lip white, blotched with purple, and to O. × caloglossum (crispum × Vuylstekeæ), the latter a remarkably fine and richly-coloured form, the sepals and petals being almost covered with claret-coloured blotches, except at the tips and margins, and the lip white, blotched with dark rose in front of the yellow crest.

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Flora Medal for a very fine group, containing several fine forms of Cattleya × Octave Doin, Brassocattleya Queen Alexandra, Lælio-cattleya illustris, and other showy members of this group, forms of Odontoglossum crispum, the handsome O. × Elaine, a good selection of O. × Rolfeæ, and other Odontoglossums, two fine plants of Vanda Amesiana, each bearing nine strong, branched flower-spikes, Cypripedium × exul-concolor, the richly-coloured Selenipedium × Saundersianum, and others.

Messrs. James Cypher & Sons, Cheltenham, staged a fine group of Cypripediums, Odontoglossums. varieties of Lælia anceps, &c., to which a Silver Flora Medal was given. Among noteworthy forms were the large and handsome Cypripedium × Charlesianum Cypher's var., a fine dark C. × Harrisianum, C. × vil-exul, C. × Madame Jules Hye, C. × Minos Young's var., C. × George Moore (× Sallieri × Mrs. William Mostyn), and others.

Messrs. Sander and Sons, St. Albans, also received a Silver Flora Medal for a rich and varied group, including the beautiful white Brassocattleya Madame Fournier var. alba, a fine B.-c. Madame Charles Maron with eight flowers, the dark violet-blue Zygopetalum × Gottianum, a batch of Epidendrum Wallisii raised from seed, the remarkable Odontonia Lairesseæ (figured at page 217 of our thirteenth volume). Cattleya Trianæ Blue Gown, having flowers tinged with slaty blue, a spotted Odontoglossum raised from O. crispum × loochristiense, the pretty white Vanda Watsoni, Cypripedium × Hitchinsiæ vivicans, handsomely blotched with rose on the dorsal sepal, with other rare Cypripedes, &c.

Messrs. Armstrong and Brown, Tunbridge Wells, received a Silver Banksian Medal for a good group of Cypripedes, including C. insigne Berryanum, C. Fairrieanum purpuratum, C. × Fascinator, C. × Minos Young's var., C, × Queen of Yellows (insigne Sanderæ × villosum aureum), and other good things.

Messrs. J. McBean and Sons, Cooksbridge, staged a small group, which gained a Silver Banksian Medal. It contained several fine forms of

Odontoglossum crispum, a large and handsomely-blotched O. × loochristiense, Epiphronitis Veitchii, two good Cymbidium eburneum, Oncidium serratum, Lælia autumnalis alba, and others. An Award of Merit was given to L. anceps Schrœderæ Grace Ruby, a handsome form, having white flowers tinged with magenta on the petals, and the lobes of the lip rose-purple.

Messrs. James Veitch and Sons, Chelsea, also received a Silver Banksian Medal for a small group, in which the handsome Cypripedium × Countess of Carnarvon (villosum giganteum × Euryades), and Phalænopsis × Mrs. J. H. Veitch (Lueddemanniana × Sanderiana) were conspicuous.

Mr. F. C. Young, St. Albans, also received a Silver Banksian Medal for a group of Cypripedes, containing some good varieties of C. × Actæus, C. × Clio giganteum, C. × Tityus, C. × Madame Lloyd (× Tityus × Calypso), a brightly coloured flower, and others.

Messrs. Heath and Sons, Cheltenham, sent a small group, including Odontoglossum crispum, O. × Andersonianum, and various Cypripedes.

Messrs. Hugh Low and Co., Enfield, staged a good group, containing Platyclinis glumacea, Spathoglottis Lobbii, Cypripedium × Sallieri Hyeanum, C. × Maudiæ, C. × Minos Low's var., the handsome C. × Ville de Paris, C. × Olivia, and C. × Thompsoni, with a distinct hybrid between C. ciliolare and C. Chamberlainianum.

M. Mertens, Ghent, sent Miltonia × Bleuana grandiflora, Cypripedium × aureum Hyeanum and virginale, Cattleya Trianæ, and others.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, sent a small group of hybrid Cypripedes.

Mr. John Robson, Altrincham, sent C. × aureum, C. × Thompsoni with six flowers, and C. × Mrs. Robson (× Actæus langleyense × insigne Harefield Hall var.), a very fine thing, having a broadly rounded dorsal sepal, green spotted with brown, and white at the apex.

Mr. Sadler, Beedon, Newbury, sent a very fine Cypripedium called C. × Madame Jules Hye var. grande.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on December 23rd last, when there was a fine display of Orchids, and the awards consisted of two Medals, three First-class Certificates, and eight Awards of Merit.

The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. Cypher, Leemann, Parker, Sander, Shill, P. Smith, Warburton, Ward, and Weathers (hon. sec.).

A. Warburton, Esq., Vine House, Haslingden, sent a group of fine things, gaining First-class Certificates for Odontoglossum Uroskinneri Vine

House var. and Brassocattleya Warburtoni (B. Digbyana × C. Schrœderæ alba), a beautiful greenish white flower, fairly intermediate in shape. Awards of Merit were also given to Cypripedium insigne Sadleri, C. × Ville de Paris, and C. × Amy Moore.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), staged a very choice group of Cypripediums, species and hybrids, a Silver-gilt Medal being awarded.

J. H. Craven, Esq., Keighley, Yorks (gr. Mr. Corney), received a First-class Certificate for Cypripedium × Archimedes var. eboraicum, and an Award of Merit for C. × Archimedes, Craven's var.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), received Awards of Merit for Cypripedium insigne Holfordianum, C. i. Sheila, and C. × General Stoessel.

Messrs. J. Cypher and Sons, Cheltenham, received a Silver Medal for a choice group, in which a fine specimen of Cypripedium × Leeanum bearing thirty flowers, was particularly noteworthy.

Messrs. Charlesworth and Co., Heaton, Bradford, sent the very pretty Odontioda heatonensis var. St. Vincent (Cochlioda sanguinea × Odontoglossum cirrhosum).

Messrs. Keeling and Sons, Bradford, received an Award of Merit for Cypripedium × Hector, said to be a cross between C. × Sallieri and C. × nitens magnificum.

At the meeting held on January 10th there was again a fine display of plants, and the awards included six medals and twelve Awards of Merit.

The members of the Committee present were, E. Ashworth, Esq., Chairman, and Messrs. Ashton, R. Ashworth, Cypher, Keeling, Parker, Ritchie, Rogers, Sander, Shill, P. Smith, Thompson, Thorpe, Ward, Williamson, and P. Weathers (hon. sec.).

W. Thompson, Esq., Stone (gr. Mr. Stevens), staged a fine group, the most noteworthy plant being the fine Odontoglossum × Thompsonianum, now in much improved condition, while each of the following gained an Award of Merit:—Cypripedium × Alcibiades superbum, C. × aureum delicatum, C. × Hitchinsiæ var. Babette, C. × H. stupendum, C. × H. Thompsonianum, C. insigne var. Eileen, C. i. var. Mars, C. × Violet Arkle, and Odontoglossum × Lambeauanum Thompson's var.

A. Warburton, Esq., Haslingden, received a Silver Medal for a good group, the most noteworthy plant being Odontoglossum crispum var. Flora Marguerite, derived from two spotted varieties, which received an Award of Merit.

J. H. Craven, Esq., Keighley (gr. Mr. Corney), received an Award of Merit for Cypripedium × Venus, Craven's var.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), received an Award of Merit for Cypripedium × Transvaal superbum.

W. Laverton, Esq., Nantwich, received a Bronze Medal for a pretty little group.

Messrs. Charlesworth and Co., Bradford, and Messrs. James Cypher and Sons, Cheltenham, each received a Silver Medal for a fine group, while Messrs. Keeling and Sons, Bradford, and Messrs. J. W. Moore, Ltd., Rawdon, each received a Bronze Medal, and Mr. J. Sadler, Beedon, Berks, a Vote of Thanks for interesting groups.

ODONTOGLOSSUM SEEDLINGS AT BRUSSELS.

OUR last issue contained (page 27) an account of several beautiful seedling Odontoglossums received from M. Lucien Linden, Brussels. M. Linden now sends a fine series of photographs, showing the remarkable progress that has been made in raising these beautiful plants. Five of them show the interiors of different houses, where the seedlings in the aggregate run into thousands, in fact one shows a group of three thousand seedlings, the larger with four or five leaves, but the majority smaller. They have been pricked off many together on average-sized pots. About half of these are described as O. crispum seedlings, the result of intercrossing various choice varieties. A slightly smaller batch consists of crosses between O. crispum and various Miltonias, and these should be particularly interesting, for we believe that at present the only Odontonia which has reached the flowering stage is the beautiful O. Lairesseæ. The larger plants are crosses between O. crispum and Cochlioda, several dozen in number, and these will presumably be forms of Odontioda × Bradshawiæ.

A second photo shows one side of a house of seedlings, one batch being labelled Miltonia × Odontoglossum, a second O. crispum, while the majority are hybrids between various species of Odontoglossum. A third photo shows a lot more seedlings, and a few old plants bearing capsules, while a fourth shows a house of seedling plants three to four years old, and just on the point of flowering. These two photos show M. Lucien Linden, with his foreman, M. Notte, among their plants. A fifth photo shows another house, the plants being slightly further advanced, as a few of them are already in bud.

These photos are accompanied by six others, portraits of individual seedlings. O. CRISPUM var. ILLUSTRATUM (O. c. Vinicius × O. c. purpuratum), is a very round flower, said to be $3\frac{1}{2}$ inches in diameter, with broad segments, which are more than half occupied by large, very richly-coloured blotches. It flowered last September. O. c. COLORATUM is from the same cross, and has rather more pointed sepals and more toothed petals,

but is very similar in other details of shape and markings. It flowered in January of the present year. A third is the variety of O. × mirum noted on page 27, which is certainly a charming thing. A fourth photo is labelled O. × WATSONIANUM, and is from O. × loochristiense × O. crispum tessellatum. The flower is large, finely-formed, and very handsomely marked, the sepals each bearing a couple of large blotches, and the petals numerous smaller ones. The two remaining seedlings are from O. × Wilckeanum × O. × loochristiense, and are both handsomely blotched, though differing in the breadth of the segments and the size of the spots. All the three latter flowered in January of the present year. We cannot, of course, describe the colour from photographs, but we may receive flowers later.

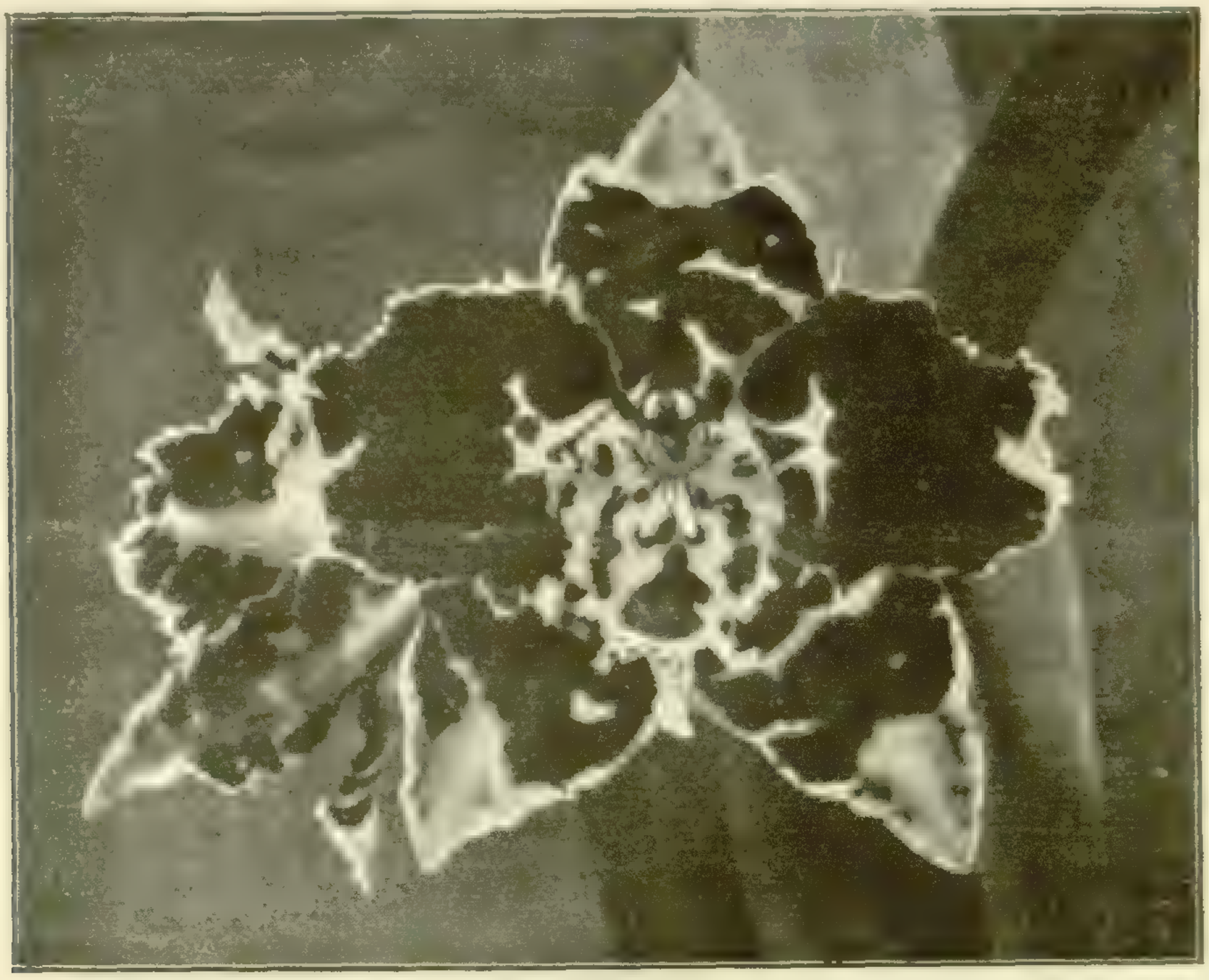

Fig. 7. ODONTOGLOSSUM CRISPUM VAR. TRIOMPHE DE MOORTEBEEK.

Our figure represents the handsome O. crispum var. Triomphe de Moortebeek, and is reproduced from the photograph mentioned last month (p. 27), and as the characters were given from a living flower, we need not repeat them. We may congratulate M. Linden on such marked success, and venture to express the hope that he will continue to record the exact parentage of his seedlings, whatever their quality, as it is of the greatest interest in connection with the origin of the various natural hybrids and blotched "crispums" which are now so highly prized. It is a question of great biological interest. We want to know more about the range of variation between seedlings from the same capsule, and it does not the least matter if some of them are of inferior horticultural merit. No one expects them to be all "plums," even if the choicest varieties only are used as

parents. The horticultural side of the question will take care of itself, but we want more than fine things. We want to know also their origin and relationship to each other, for we have already too many that are of quite doubtful parentage.

In conclusion we may add that M. Linden also encloses a photo showing a house with seedling Cypripedes on one side and Cattleyas crossed with allied genera on the other.

EPIDENDRUM × KEWENSE: A MENDELIAN EXPERIMENT.

THE history of Epidendrum × kewense has already been given in this work (vol. xi. p. 6). The reciprocal crosses between E. erectum and E. xanthinum, which produced it, were made before the Mendelian problem was engaging so much attention, but when the hybrids flowered it was obvious that here was material for a very interesting Mendelian experiment. The two parents, though so closely resembling each other in general character, possess one very marked difference, namely, that of colour, one having flowers of a very deep self purple, the other of a clear bright yellow. There were also the advantages that the pollen can be easily manipulated, without much risk of the results being vitiated by stray pollen from some unknown source, and that the seedlings arrive at the flowering stage within a reasonable period. Accordingly, at the end of 1902, I carefully self-pollinated several flowers in succession, but without getting a capsule. I then crossed and recrossed the hybrid with both its parents, and succeeded in getting two out of four possible capsules, namely E. × kewense ♀ × evectum ♂, and E. xanthinum ♀ × kewense ♂. The seeds ripened in the course of the summer and were at once sown, both yielding plenty of seedlings, of which only a few could be kept and grown on. Last autumn three spikes began to push. A flower of E. xanthinum × kewense expanded first, and proved to be orange-yellow, decidedly deeper in colour than the seed parent. A bad spell of fog came, and the rest of the buds dropped. There is a second spike of the same cross, but the buds are not yet open. Flowers of the other cross, E. × kewense × evectum, expanded a few days later, and proved to be bright purple, with a yellow crest; not so deep a purple as the pollen parent, in which the crest also is purple. Both the secondary hybrids are therefore partially intermediate, as in the case of Phragmopedilum × Sedeni recrossed with its two parents. Over a year later, when the plants of E. × kewense were stronger, I again tried to self-fertilise the flowers, and this time obtained a good capsule and plenty of seedlings, which are now over a year old, and in thriving condition. When these arrive at the flowering stage the results should be very interesting. I may add that the results of these crosses have already been predicted from a Mendelian standpoint, but it remains to

be seen how far later events may modify any conclusions that might be arrived at from present indications.

The Mendelian hypothesis, as I understand it, assumes that the marked colour difference between these two species is due to specific differences in the colour-bearing gemmules, by which the character is handed on with constancy. The result of hybridising the two is to combine these diverse tendencies, giving a more or less intermediate result, but it is assumed that in the hybrid the character-bearers remain unaltered, part being potentially purple and part yellow, the two on an average being present in equal numbers. When self-fertilised these gemmules have an opportunity of rearranging themselves, purple with purple, purple with yellow, yellow with yellow, and yellow with purple, and on an average these four combinations will occur in equal numbers, according to the law of averages, or twenty-five per cent. each. Thus twenty-five per cent. of the seedlings should have purple flowers, like E. evectum, and twenty-five per cent. yellow flowers, like E. xanthinum, but as purple with yellow gives the same result as yellow with purple (the two classes being indistinguishable) the remaining fifty per cent. should be salmon-coloured, like E. × kewense. Conversely, there should be no intermediate stages between these three classes. The experiments above described should throw a very interesting light on the question, because we are dealing with plants having well-marked specific differences, and distinct lines of descent, not with inbred races, and the assumed "Law of Gametic Purity" may not apply in the same way. It seems to me that dissociation of mixed or hybrid character is a much simpler explanation of many of the phenomena that are associated with Mendelism, and need not be of universal application. as the so-called "Law of Dominance" is now acknowledged not to be. The Laws of Heredity, whatever they may be, are not of merely partial application.

R. A. ROLFE.

ORCHIDS AT KEW.

THERE has been a fine display of Orchids at Kew throughout the winter. to which the fine old Cattleya labiata, the Mexican Lælias. Paphiopedilum insigne with its hybrids, and latterly the deciduous Calanthes have contributed largely. Owing to the ravages of fog, however, there has been a considerable falling off during the past fortnight, though a good many interesting things are in bloom. One of the best is the charming little Pleione yunnanensis, figured at page 81 of our last volume. but the fog took some of the buds, one flower alone escaping. Epidendrum fragrans, which is flowering freely in the Warm house, passed through the fog unscathed, and its flowers are deliciously fragrant, so that the plant is very attractive when well grown. Others in bloom are E. evectum and E.

xanthinum, with the hybrid between them, E. × kewense, also E. × O'Brienianum, E. verrucosum, E. Cooperianum, the pretty little E. polybulbon, which is grown in a basket suspended from the roof, E. × Berkeleyi and E. Wallisii. A good plant of Cœlogyne graminifolia was a mass of flowers, but the fog hastened their disappearance. Lælia Regnellii is a very pretty little plant which is very rarely seen. It resembles Sophronitis violacea in habit, having terete leaves, but is about twice as large, and has small whitish flowers veined with purple on the lip. Tainia latifolia, T. viridi-fusca, and T. penangiana are in bloom, the latter carrying about a dozen spikes, while Lælia anceps Sanderiana and Oncidium splendidum are very handsome.

Numerous species and hybrids of Paphiopedilum are in flower, and very few Orchids resist fog better. They invariably make a fine display during the winter. Near by are Vanda Amesiana and V. Watsoni, Listrostachys hamata, L. pellucida, Saccolabium giganteum, Angræcum eburneum, and others, also Phalænopsis denticulata, and several of the showy species, which, as usual, suffered much through the fog. Hæmaria discolor is producing several pretty spikes of white flowers with a yellow blotch on the lip, and is very attractive.

The Cool house contains numerous Odontoglossums, among which O. nevadense, O. mirandum, O. × waltonense, O. × crispo-Harryanum, and O. ramosissimum may be mentioned. There is also a good plant of Pleurothallis Roezlii, with Zygopetalum intermedium, Zygocolax × Amesianus, and some good Lycaste Skinneri, Masdevallias, Cymbidiums and others.

Several species and hybrids of the Cattleya group are in flower, but suffered through the fog, though Oncidiums were little affected.

ORCHIDS FROM PENARTH.

THE collection of Orchids grown by J. J. Neale, Esq., of Penarth, is clearly a representative one, and we have again flowers from Mr. Haddon of quite an interesting series. Epidendrum polybulbon is evidently represented by a very fine specimen, which is grown close to the glass in the Cool-intermediate house, and is now producing eighty-five blooms, and these, it may be mentioned, are each borne singly on a short slender scape from the apex of the pseudobulb, giving the plant somewhat the appearance of a Sophronitis as regards habit. Saccolabium violaceum var. Harrisonianum is a pretty little albino not too frequently met with. Stenorrhynchus speciosus is a plant of Spiranthes-like habit, sometimes referred to that genus, which has tall erect spikes of rosy-red flowers, and are very effective. Oncidium Cebolleta is one of the terete-leaved species, producing erect panicles of bright yellow flowers. blotched with red on the sepals and petals, other species represented being O. Cavendishianum and O. serratum.

Well-known winter-flowering species are represented by Lælia anceps and var. Stella, Cattleya Percivaliana and C. quadricolor (chocoensis), Lycaste Skinneri, forms of Odontoglossum Rossii, the pretty little O. nævium, Cymbidium giganteum, Angræcum superbum, and a twin-flowered scape of Paphiopedilum × Harrisianum. The remainder are the charming white Masdevallia tovarensis, M. triangularis, Epidendrum odoratissimum, Isochilus linearis, and Catasetum viridiflavum, forming a very interesting series.

ORCHIDS IN SEASON.

TWIN-flowered forms of Lycaste Skinneri are not common, but a scape of three flowers is altogether exceptional. Mr. F. W. Moore sends a twin-flowered scape from the Royal Botanic Gardens, Glasnevin, and he writes that one inflorescence from the same plant has three expanded flowers on it, and that this plant has always two or three flowers on the inflorescense. We cannot suggest any reason for the character, unless the plant is exceptionally strong, for we do not detect any essential difference. The flowers have the usual broad, light pink sepals, darker petals, the front lobe of the lip nearly white with a few pink dots, and the side lobes pink. Flowers of Paphiopedilum insigne Macfarlanei and Green Bank var. are also sent, the former being yellow suffused with brown on the dorsal sepal, and the latter bearing numerous small spots. It has been suggested that they are not pure insigne types, but until we know for certain whether any other species grows with P. insigne we must regard the variations observed as due to polymorphism.

A remarkably fine flower of Paphiopedilum insigne is sent by Dr. J. F. Shafer, Pittsburgh, Pa., U.S.A., together with a photograph. It came out of an importation received four years ago, and is now flowering for the first time. The leaves are said to be shorter than the type and more rigid. The dorsal sepal is broadly margined with white, and bears numerous rather small blotches on the greenish yellow disc. The flower was rather faded on arrival, and we cannot say whether it agrees with any of the numerous varieties that have been named. It should certainly be taken care of.

Several good flowers of Dendrobium nobile are sent from the collection of W. R. Scott, Esq., Crieff Villa, Chester-le-street, which have flowered from a recent importation, together with a flower of the handsome Lælio-cattleya luminosa, and a Paphiopedilum which we do not recognise from the flower alone, though it seems to come near P. virens. It is presumably a hybrid.

Several interesting Paphiopedilums are sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, by Mr. Rogers. Five are seedlings raised in the collection, and include two forms of P. × aureum,

derived from P. × Sallieri Hyeanum × Spicerianum, and two forms of P. × Leeanum. There is also a very good form of P. × Charlesianum.

Flowers of two very beautiful hybrids have been sent from the collection of Major G. L. Holford, Westonbirt, Tetbury, by Mr. Alexander. Lælio-cattleya Ariel was derived from Lælia Cowanii and Cattleya Dowiana aurea, and clearly shows its origin, as the sepals and petals are under two inches long, and very deep yellow in colour, while the lip is three-lobed, and orange-crimson with yellow veining on the disc. It is a gem, and Mr. Alexander considers it by far the best of the L. Cowanii hybrids. Paphiopedilum × Moloch, derived from P. × Euryades and P. Charlesworthii, is also very beautiful. The centre of the dorsal sepal is rose-purple, and the broad margin white, with some rose-purple blotching at the sides. The lip and petals are of the Charlesworthii type, the latter being rather longer, and the staminode white with a yellow tooth. Both were exhibited at the R.H.S. meeting on January 22nd, last.

ODONTOGLOSSUM LEAVES DECAYING AT THE TIP.

A CORRESPONDENT sends us examples of some Odontoglossum leaves which are decaying at the tip, and asks us to suggest the cause and a possible remedy. He remarks:—"The tips of the new leaves begin to turn brown, and if they are not cut off the whole leaf is soon lost. I know that is nothing unusual for Odontos to get tipped in this way, and when I was at one of the nurseries it was taken as a matter of course, but it disfigures the plants. It does not seem to attack weak plants more than strong ones, as some of our strong plants suffer most. The house is kept well ventilated, and only during frosty weather are the bottom ventilators closed, and we are able to keep a steady temperature, the lowest reading during this winter being 40 degrees, but our usual night temperature is about 45. It might be suggested that the house is too moist for the time of year, but since I first noticed the tipping some weeks ago I have kept the house drier, but that seems to have no effect, indeed I believe it has spread worse than before. In the case of O. crispum it attacks the tips, and gradually works down, but in a leaf of O. Harryanum which I enclose it has attacked the leaf in the form of spots. I should be very grateful if anyone can suggest a remedy."

We cannot detect any trace of fungus, and we are inclined to think the disease commences with a chill, owing to the presence of too much moisture with a falling temperature, as it occurs chiefly we believe during the winter. The full effects would not be seen immediately. We should be glad to know the experience of other correspondents.

NOTES.

THE January issue of M. Goossens' useful *Dictionnaire Iconographique des Orchidées* contains figures of the following Orchids:—Cattleya × Fabia var. Mary de Wavrin, C. Warscewiczii var. Madame Melanie Beyrodt, Cœlogyne miniata, Lindl., Epidendrum aurantiacum, Batem., Lælio-cattleya Berthe Fournier var. obscure-purpurea, L.-c. Fraulein Lotte Abeken, Odontoglossum Boddaertianum var. arachnoides, Odontoglossum Thompsonianum var. M. Osc. Fanyau, Ornithidium coccineum, Renanthera Imschootiana, R. Storiei, Selenipedium torconiense, and Sophrolælia Psyche.

The next meeting of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on February 12th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The Annual General Meeting will be held at 3 p.m. on this date. The following meeting is fixed for March 3th.

The Manchester and North of England Orchid Society will hold meetings at the Corn Exchange, Manchester, on February 7th and 14th, and March 7th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

A very interesting flower has been sent by M. Ch. Maron, Brunoy, France, which has been raised from Lælia anceps crossed with L. autumnalis, and thus, as the raiser remarks, should be a form of L. × Gouldiana. It has, however, longer, lighter-coloured sepals and petals, and thus has more of the L. autumnalis character. But the influence of the mother plant is clearly seen in the shape and markings of the lip. Probably other seedlings would show more of the Gouldiana character, and some supposed natural hybrids between the two species have been more like M. Maron's plant. No doubt the hybrid varies considerably.

M. Maron also sends photographs of Brassocatlælia × Lido, a handsome hybrid from Brassavola Digbyana ♀ × Lælio-cattleya Henry Greenwood ♂, clearly showing the influence of both parents. This and six other hybrids mentioned by M. Maron all received First-class Certificates at Paris last year. We may be able to note some of them later.

ORCHID PORTRAITS.

ANCISTROCHILUS ROTHSCHILDIANUS, O'Brien.—*Gard. Chron.* 1907, i. pp. 50, 51, fig. 24.

ANCISTROCHILUS THOMSONIANUS. Rolfe.—*Gard. Chron.* 1907, i. p. 51 fig. 25.

CATASETUM MONODON, Kränzl.—*Orchis*, i. p. 43, t. 6.

CATTLEYA DUSSELDORFII VAR. UNDINE.—*Journ. Hort.* 1907, p. 3, with fig.

CATTLEYA LABIATA WARSCEWICZII.—*Orchis*, i. p. 53, t. 7.

CATTLEYA MOSSIÆ ALBA SULPHUREA.—*Trib. Hort.* 1907, p. 4, t. 21.

CYPERORCHIS ELEGANS VAR. BLUMEI.—*Journ. Hort.* 1907, i. p. 71, with fig.

CYPRIPEDIUM × ACTÆUS LANGLEYENSE.—*Gard. Chron.* 1907, i. p. 12, fig. 10.

CYPRIPEDIUM × ŒNANTHUM SUPERBUM.—*Orchis*, i. p. 52, fig. 25, 26.

DENDROBIUM WARDIANUM LOWII.—*Journ. Hort.* 1907, i. p. 49, with fig.

LÆLIA ANCEPS CRAWSHAYANA.—*Journ. Hort.* 1907, i. p. 27, with fig.

MAXILLARIA SANDERIANA.—*Orchis*, i. p. 43, fig. 18.

ODONTIODA BRADSHAWIÆ.—*Gard. Chron.* 1907, i. p. 36, fig. 21; *Gard. Mag.* 1907, p. 41, with fig.

ODONTOGLOSSUM × ALICEÆ.—*Gard. Chron.* 1907, i. p. 26, fig. 15; *Gard. Mag.* 1907, p. 41, with fig.

ODONTOGLOSSUM × BEAUTE CELESTE.—*Gard. Chron.* 1907, i. p. 59 fig. 28.

ODONTOGLOSSUM CRISPUM MME. LINDEN.—*Garden*, 1907, i. p. 29. with fig.

ODONTOGLOSSUM GRANDE.—*Orchis*, i. p. 51, fig. 24.

ODONTOGLOSSUM SCHLIEPERIANUM.—*Orchis*, i. p. 51, fig. 23.

ODONTOGLOSSUM WILLIAMSIANUM.—*Orchis*, i. p. 51, fig. 22.

RENANTHERA ANNAMENSIS, Rolfe.—*Bot. Mag.* t. 8116.

VANDA CŒRULEA.—*Journ. Hort.* 1907, i. p. 93, with fig.

ZYGOPETALUM CRINITUM CŒRULEUM.—*Gard. Mag.* 1907, p. 59, with fig.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work*].

W.C.—All hybrids between the same two species should be considered as forms of one, and any that are distinct enough should be distinguished by the addition of a varietal name. The use of a different variety as parent does not necessarily imply a difference in the hybrid, for in some cases there is not the difference that might have been anticipated, while some very distinct varieties have come out of the same capsule. Name only the best forms.

H.H.—Epidendrum species not recognised. Perhaps another time a more complete specimen can be spared.

J.W.—The varieties of Cattleya Trianæ, as of several other popular species, are endless, and we have already too many names.

H.G.A.—Odontoglossum Hunnewellianum.

E.R.—Oncidium obryzatum is one of the showiest species of this group.

Photographs received with thanks.—A.W.H., L.L., W.P.B., J.F.S., J.C., W.B., J.C., I.B

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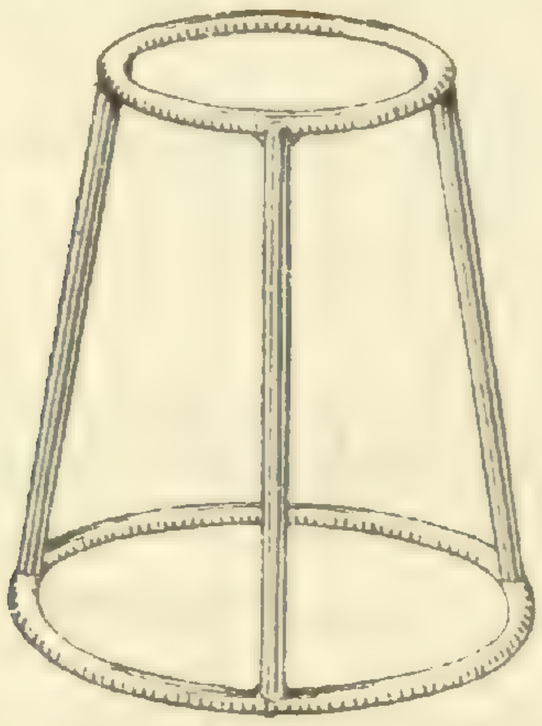

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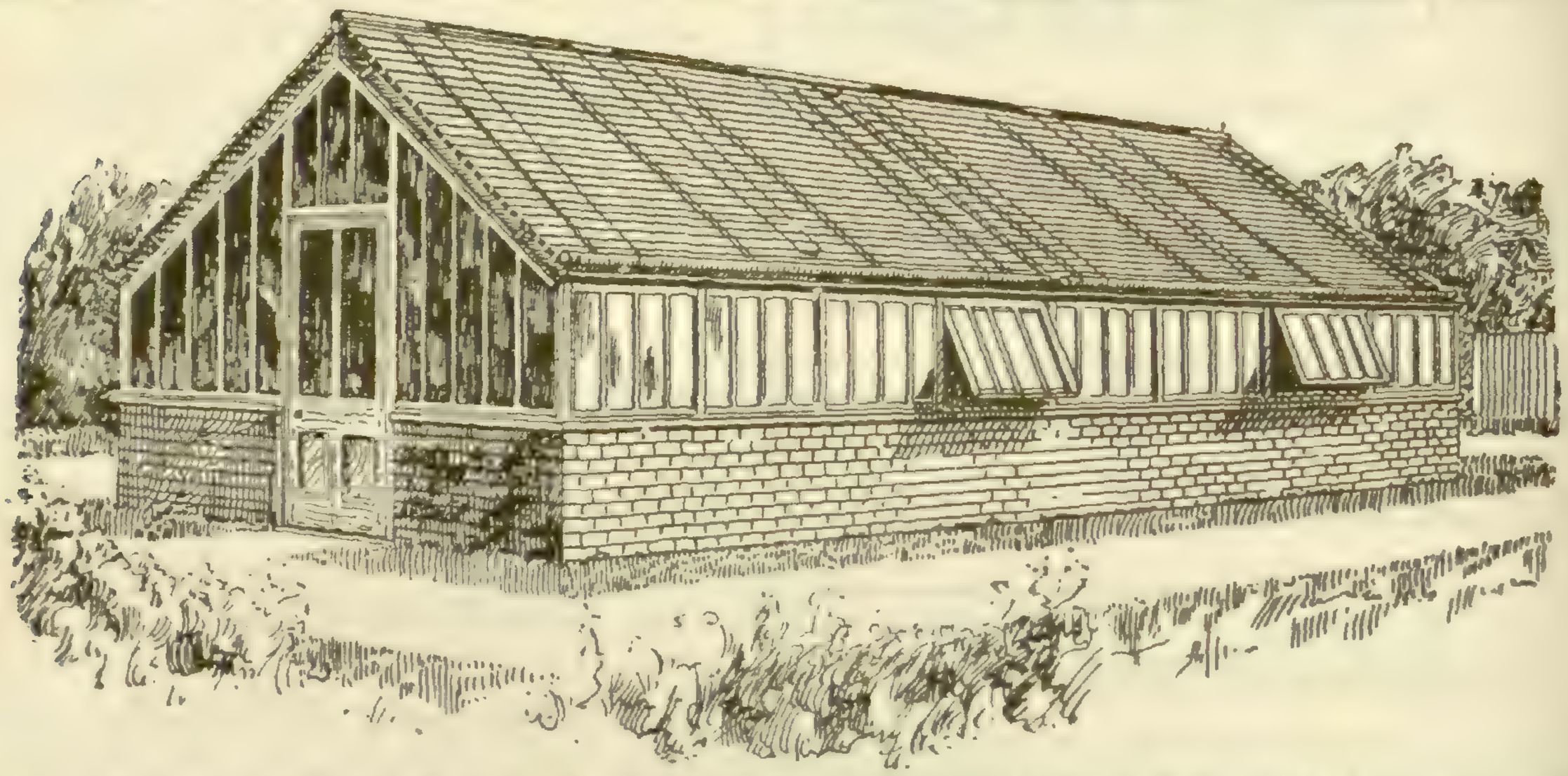

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MEETING of the COMMITTEE for the purpose of adjudicating upon the Orchids submitted will be held at the Coal Exchange, Manchester, on February 7th and 14th, 1907, at 12 o'clock prompt. Open to Members from 1 to 3 p.m.

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Botanical Gardens, Manchester

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THE ORCHID REVIEW.

VOL. XV.] *MARCH*, 1907. [No. 171.

OBITUARY.

JOSEPH BROOME.—We greatly regret to hear of the death of Joseph Broome, Esq., J.P., Sunny Hill, Llandudno, which took place on January 25th last, the cause being heart failure, after an attack of congestion of the lungs. The deceased gentleman was born at Preston Brook, near Frodsham, on May 1st, 1825, and consequently was in his 82nd year. For many years Mr. Broome was a great lover and successful cultivator of Orchids; indeed, he was a great lover of flowers generally, from the most gorgeous Cattleya to the humblest of garden flowers. His collection of Orchids was a fairly large and representative one, and his gardener, Mr. Axtell, remarks that most of it he had imported himself. He loved an Orchid for the flower itself, not for its market value. Many good things have flowered in his collection, but he was never smitten with the craze for new things, and never paid fabulous prices for them, neither did he care much for hybrids. He judged a flower entirely by its merits, but was very loyal to his first favourites, as he appreciated any common Orchid more if he could remember the same plant fifteen or twenty years ago. He once told us that it was one of his chief pleasures in Orchid growing to watch imported plants gradually establish themselves, produce their growths, and ultimately develop their flowers. Mr. Axtell remarks that he grew Orchids as much to give others pleasure as himself, and every visitor to Sunny Hill went away with a lovely bunch of flowers.

Mr. Broome always took great interest in the Manchester Royal Botanical and Horticultural Society, and received many Gold and Silver Medals from that Society for Orchids and other plants, as far back as 1874. He became a member of the Council in 1869, Treasurer in 1876, and Chairman in 1887, when he succeeded Dr. John Watts. He once showed a plant of Vanda teres at Manchester with 250 blooms, which was greatly admired. He was the first to flower the beautiful Cattleya velutina, Rchb. ., in 1870, the author remarking (*Gard. Chron.* 1870, p. 140) that a flower had been sent to him from the collection of Joseph Broome, Esq., of Didsbury, Manchester (a former residence), and that it was probably a native of

Brazil, having been received from an agent whose headquarters were at Rio de Janeiro. Odontoglossum crinitum also first flowered with him, in 1882, Reichenbach remarking (*Gard. Chron.* 1882, ii. p. 40): "It was sent by Mr. J. Broome, Wood Lawn, Palatine Road, Didsbury, who has had the rare pleasure of flowering, no doubt for the first time in Europe, a new Odontoglossum." Lælio-cattleya elegans Broomeana (*Orch. Alb.* ix. t. 413) is a very richly-coloured variety which flowered in his collection in 1877, and Cattleya Trianæ Broomeana is another very handsome variety which bears his name. Odontoglossum × Adrianæ var. insigne is a striking variety from Mr. Broome, which was described at page 286 of our ninth volume. Mr. Broome has been a supporter of the *Orchid Review* from the commencement, and we have received various other beautiful Orchids from him.

Mr. Axtell has been head gardener at Sunny Hill for nearly ten years, and remarks that a better master never lived, and all his servants were treated as personal friends. He gave freely to every deserving object, and those in trouble could always rely on his assistance. Only those connected with him know how good he was. He was buried at St. Tudno's churchyard, on the top of the Great Orme, Llandudno, on January 29th, when the trustees of the Manchester Botanical and Horticultural Society sent a beautiful floral tribute. About sixty wreaths, &c., were sent, some of which were magnificent.

OTTO KUNTZE.—A letter from San Remo informs us that Dr. Otto Kuntze died there very suddenly on January 29th last, and we tender our sympathy to his widow, Frau Helene Kuntze, in her bereavement. The deceased, though not an Orchidist, collected a number of Orchids (among other plants) during his journey round the world some years ago, and these were named for him by Reichenbach. An attempt to give an account of his collections soon developed into his notorious *Revisio Genera Plantarum*, published in 1891, in which he renamed thousands of plants in the supposed interests of "priority and stability of nomenclature." During its preparation he resided at Kew for some years, and in it Orchids were dealt with in unsparing fashion, resulting in the abolition of several of the most familiar genera, and the substitution of hundreds of new names, partly owing to his going back to a period before the system of binomial nomenclature was invented by Linnæus. This and other upheavals ultimately led to the holding of the International Botanical Congress at Vienna, whose decisions were summarised at pp. 356-358 of our last volume. Dr. Kuntze attended this Congress to read a protest against its legality and then withdrew. His latest protest appeared (after his death) in the *Gardeners' Chronicle* for February 9th. In that he alluded to the Vienna Congress as "pseudo-international," and its rules as "Regulæ irregulares immaturæ

Nomenclaturæ botanicæ Vindobonensis in Actis falsis." He also alludes to the "Vienna Index inhonestans, a very unfair thing, by which my correct names of plants cannot become synonyms," and speaks of the date 1753 as the starting-point for genera as "a horrible fiction and mistake that I cannot accept as a scientific and honest man." Well, 1753 is the date of the promulgation of the binomial system of nomenclature, and the result of going behind it resulted in the creation of thousands of unnecessary and useless names, and yet Dr. Kuntze alludes to his aim as being "to make as few as possible changements of name." Dr. Kuntze was the stormy petrel of nomenclature, and we can only regret that his industry and abilities were not put to better use. But we can endorse the remark of M. Alwin Berger (*Gard. Chron.* 1907, i. p. 105):—"However aggressive he was in his publications as regards nomenclature, he was a pleasant kind-hearted friend to many, and ever ready to help and to allow the use of his rich library and herbarium."

EPIDENDRUM DENSIFLORUM.

A PLANT of this species has just flowered at the Zurich Botanic Garden, and having been sent to Kew for determination by Dr. Schinz, the event justifies an attempt to clear up its much confused history. It was originally figured and described in the *Botanical Magazine*, in 1840 (t. 3791), by Sir William Hooker, from a specimen which flowered in the collection of the Duke of Bedford, at Woburn, in September, 1839, and is said to have been sent from Mexico by John Parkinson, H.B.M. Consul there. Lindley afterwards (*Fol. Orch. Epid.* p. 60) made it a synonym of his E. polyanthum, but if he is correct in citing *Batem. Orch. Mex. et Guat.* t. 34 as representing that species (I have not seen Paron's original specimen) the two are quite distinct. He, however, also cites it in the same work (p. 91) as a synonym of E. floribundum, H.B.K., which is again different, so that he clearly did not understand it correctly. Reichenbach, in 1862 (*Walp. Ann.* vi. pp. 379, 413), repeated the mistake, though he afterwards claimed *Bot. Mag.* t. 3791 as representing his E. agathosmicum (as written upon the Kew copy). This name appeared in 1849 (*Linnæa*, xxii. p. 841), and consequently is antedated by E. densiflorum by nine years. E. agathosmicum was collected at Carraccas, by Moritz, and is said to have snow-white flowers, but those that I have seen agree with the above in having light green sepals and petals and a white lip. The species is allied to E. floribundum, H.B.K. (*Bot. Mag.* t. 3637), which has a much laxer inflorescence, and some purple dots on the lip. with a pair of linear diverging lobes in front. The Mexican habitat requires confirmation.

R. A. R.

R. H. S. ORCHID COMMITTEE.

THE following constitute the Orchid Committee of the Royal Horticultural Society for the current year. New members are indicated thus * :—

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Wellesley, Francis, J.P., Westfield, Woking.
White, W. H., Burford Lodge Gardens, Dorking.
Young, W. H., Clare Lawn Gardens, East Sheen, S.W.

ORCHIDS AT MESSRS STANLEY & CO.'S, SOUTHGATE.

Being in Southgate and with sufficient time to spare for a quick run through the nurseries of the above firm I availed myself of the opportunity. This is a nursery devoted entirely to Orchids, Messrs. Stanley & Co. being prominent as large importers from South America, and I found here an immense stock of established and semi-established Cattleyas, Lælias, Odontoglossums, Oncidiums, &c., and it being impossible to describe the houses seriatim I shall content myself with mentioning a few things. The Cattleyas included a fine lot of unflowered C. Mossiæ, among which were two gigantic specimens having 50 to 100 leads, imported as being white, but not yet proved. These and hundreds of others are in sheath. A duplicate of C. M. Victoria-Regina, the beautiful blue variety which was awarded a F.C.C. last year, was pointed out, and this is only one of the many fine C. Mossiæ which this firm has flowered. The C. Mendelii were a fine lot of plants, many hundreds being in sheath, and I was interested to find here a batch of six hundred of the somewhat scarce C. Warneri. This is considered a rather shy-flowering Cattleya, but this lot has made sheaths with great freedom. C. labiata is represented by some thousands of plants, as is also C. Trianæ. Among the latter in flower were two albino forms—one pure white, and the other having heliotrope markings on the lip. I was also fortunate in seeing among the C. Harrisoniana a beautiful pure white variety open, and I do not think I have ever seen the form eclipsed among coloured varieties. This is a decided acquisition, and was alone worth the visit. There were also large quantities of Lælia tenebrosa and L. crispa in sheath, some of the former having enormous bulbs.

Among the Oncidiums were some 500 O. concolor showing spike, also large numbers of O. varicosum Rogersii, crispum, Marshallianum, &c. The interesting O. × Stanleyi, supposed to be a natural hybrid between O. curtum and O. Marshallianum, is represented by three plants.

Other kinds of Orchids which were here in large numbers were Zygopetalum crinitum, Dendrobium Phalænopsis, a batch of five hundred Odontoglossum Harryanum, many hundreds of unflowered Sophronitis grandiflora, &c. In the Odontoglossum house were many thousands of O. crispum, and many of these, and also O. × Adrianæ, were in flower.

There are also a number of smaller houses where the choicer plants are being cared for, and good progress is now being made with home-raising, but I had not time to go closely into these. J. M. B.

ORCHIDS AT THE GRANGE, SOUTHGATE.

As a rule one finds in a collection of Orchids some speciality which stands out as the main feature, and identifies that collection as being different from others. When recently visiting the collection of J. Bradshaw, Esq., The Grange, Southgate, the impression conveyed to me was that albino Cattleyas are here the speciality—the *pièce de résistance* among the feast of other good things. This collection embraces a large number of many kinds of Orchids, which I shall presently hastily survey, but the great feature is the albino Cattleyas of the labiata group, of which Mr. Bradshaw has been an ardent collector for some years, and there is now in the collection a remarkable series of these choice and lovely plants. Albino Cattleyas of the labiata section are not regarded among Orchid growers as of easy culture, nor can we look upon Southgate as being one of the best localities for growing them, as it is only something like nine miles from Charing Cross, yet Mr. Whitelegge, who has charge of the collection, has been eminently successful with them, plants of C. labiata alba imported many years ago being still perfectly robust, and the propagation of them from back bulbs and by division goes steadily and successfully on. Although far enough out to escape many of the London fogs, the winter months are still dull when compared with districts further away, but the anæmia which one associates with town-grown plants is little in evidence here.

With regard to culture, Mr. Whitelegge has no stiff rules as to the time of potting. When the last made bulb is throwing out its roots is the time they are taken in hand. Some C. Trianæ and C. labiata were repotted or surfaced in the autumn, and some during the winter : others will be done in the spring. The fine specimen of Cattleya × Mantinii inversa which was shown in the Gold Medal group at the R.H.S. meeting held on November 6th, and which also received a Cultural Commendation, was divided into three pieces in December, and the largest piece promises to become again equal to the original plant in size when it has made its growth this year. The compost used is now two-thirds peat and one-third moss, to which is added a mere sprinkling of Belgian leaf-soil after the finer particles have been sifted out—the leaf-soil used being but a fraction per cent. of the whole. Mr. Whitelegge made some experiments a few years ago with considerable quantities of leaves in the compost, but has now entirely discontinued the use of English leaves. Crocks and not peat rhizomes are used for drainage.

METHOD OF PROPAGATION.—At the end of a very small house a case for propagation has been made, by closing in the front of the pipes and placing above them wire netting, on which has been made a bed of sphagnum moss. The back pieces of Cattleya are tied to stakes and

planted with their rhizomes a little under the surface of the bed. The moss is kept at all times moderately moist, and the plants have frequent sprays overhead. When the plants make roots and break they are potted up, and in time make plants. Many instances of progressive yearly growths were shown to me of choice Cattleyas propagated from back bulbs in this way. As this method is showing such good results, and as it is quite the opposite to hanging the bulbs up in the dry to break, I should recommend it to have a trial. There is a genial bottom heat, but there is no shutting in overhead, and the house is small and airy and not at all hot, and the case not far from the light.

I will now mention a few of the things noted. The unfortunate thing about a collection of Orchids from a visitor's point of view is that one can expect only a few to be in flower on any one day, but if the visitor be a grower this does not mean so much. In the first house entered were the Cattleya labiata varieties. Those with white sepals and petals and coloured labellums include plants of Mrs. J. Bradshaw, Amesiana, G. G. Whitelegge, R. I. Measures, Daphne, Penelope, Princess of Wales, Gilmourii, and some others, all in good flowering condition. Among several varieties of the pure white C. l. alba was a plant of the original alba Ball's var. Other notable labiatas of which mention might be made were the richly coloured and finely shaped varieties Hector and Hercules, and also glauca. Most of those were exhibited in the autumn. Growing with these were some extremely robust specimens of C. × Mantinii, C. × John Baguley, and other hybrids derived from C. Bowringiana.

In the large Cattleya house a series of lovely C. Trianæ were in flower, and quite treble the number in bud, the paintings of some of which I saw, and a wonderful collection they make. It was my intention to describe these, and I took the necessary notes, but as most of them have been exhibited and their descriptions recorded elsewhere, and as these lines are already getting numerous, I shall content myself with mentioning a few of them only. Those in flower with pure white sepals and petals, but with different shades of colour on the labellum, included Esmeralda, Pandora, and albo-violacea, while those all white were "The Pearl" and another unnamed with pale lemon throat. In flower also was C. T. Lord Chancellor, in the way of Backhouseana, while The Premier, probably the best Trianæ of all, was only half open. There are two vigorous specimens of this last, and both again divided. In this house were sixty or seventy plants of Cattleya Trianæ either pure white or having white sepals and petals. Other things in flower were C. Percivaliana splendens, a rich variety of fine shape, some Phaius hybrids, some Dendrobiums, Brassocattleya Mendelii-Digbyana Fortuna, pure white with greenish white lip, &c. Among noteworthy plants out of flower were Lælio-cattleya G. G. Whitelegge (callisto-

glossa × Hardyana), L.-c. Decia alba, L.-c. Haroldiana John Bradshaw, Cattleya Schrœderæ var. Robin, a batch of C. × Parthenia Prince of Wales, the white C. × Fabia Marie de Wavrin, C. Loddigesii alba, C. Dowiana Rosita, C. × Fabia Bradshawiæ, Brassocattleya Queen Alexandra, and a good selection of other choice hybrids.

In flower in the Intermediate house were a nice lot of Lycaste Skinneri, among them being some plants of the var. alba, also L. × Ballii, with four fine flowers. Standing among these in flower were Calanthe × Veitchii, the only Calanthe grown at the Grange. On the other side of this house were a few good specimens of Cymbidium Lowianum and C. eburneum in spike: other Cymbidiums included insigne (Sanderæ), Hookerianum, &c. Hanging from the roof we noted a particularly vigorous batch of Oncidium concolor. This is their fourth year of flowering, and they have from three to six spikes on a plant, and some of them three-branched inflorescences, an example of excellent culture.

The next house is one containing over a hundred plants of imported unflowered Cattleya Trianæ. Tbese were purchased as being from a new district, and were sent home as being white, and so far those that have flowered have *actually been so*. I need not comment further on this lot! In this house were also a dozen Cattleya Skinneri alba, with three and four leads each, &c.

We now come to the small house containing the propagating case already mentioned. Both sides of this house are full of choice Cattleyas, many of which have been propagated in the manner already described. and are working their way on to flowering size..

The Odontoglossum house is a structure seventy feet long, with side staging only, and running the wrong way. The plants are in good robust health, and include many fine specimens, and from their appearance they will yet be better. In flower were O. × Lambeauianum, O. × Wiganianum, O. × venustulum Apollo (Harryano-crispum × ardentissimum), O. × amabile punctatissimum, a striking variety, having a rose ground with showers of purple spots on sepals and petals; O. × Othello, O. Harryano-crispum, O. × ardentissimum, two good varieties, the white O. Rolfeæ Kathleen, which was in spike, and other hybrids. Among the choice O. crispums are a few of the best blotched varieties of fame.

Of particular interest out of flower were noted Odontioda Bradshawiæ (Cochlioda Noetzliana × Odontoglossum crispum), which has recently been described and commented upon in the *Orchid Review* [and is now figured at page 81.—ED.], and which is, so far, unique.

Mr. Bradshaw is to be congratulated as the owner of such a fine collection, and Mr. Whitelegge on its good cultural condition.

J. M. BLACK.

CŒLOGYNE × COLMANII.

Cœlogyne × Colmanii is a beautiful hybrid raised in the collection of Jeremiah Colman, Esq., Gatton Park, Reigate, by Mr. Bound, from C. speciosa ♀ and C. cristata alba ♂, which received an Award of Merit from the R.H.S. on February 12th last. Mr. Bound writes that the cross was made on April 15th, 1900, the seed sown on October 1st, 1901, and the first flower expanded on January 27th of the present year. When exhibited the plant was bearing three twin-flowered scapes, but the photograph here reproduced was taken by Mr. Bound when only two flowers were expanded. It will be seen that the plant has retained most of the habit of the seed

Fig. 8. Cœlogyne × Colmanii.

parent, but the scape is taller, the sepals and petals white, not light green, while the markings on the lip are orange-brown, not dusky brown. The hairs of the keels are also more than twice as long as in C. speciosa, in all of which characters the influence of the seed parent is strongly in evidence. Mr. Bound sends one of the scapes, with flowers of C. speciosa and the typical form of C. cristata, so that it is easy to trace the influence of the two parent species. The petals are twice as broad as in C. speciosa, and the sepals distinctly undulate, both characters derived from C. speciosa. It is a very attractive thing, and promises to be very free-flowering. The only other hybrid Cœlogyne that we know of is C. × Brymeriana (Dayana

× asperata), raised by Col. Brymer, Ilsington House, Dorchester, and recorded at page 173 of our last volume. We do not remember that any natural hybrid has yet been recognised in the genus, though they might occur where allied species grow together.

CALENDAR OF OPERATIONS FOR MARCH.

By W. P. BOUND, Gatton Park, Reigate.

WITH March comes an increase in the temperatures of the Orchid houses, and it is perhaps the most difficult month in the whole year to know how best to meet the many and often sudden atmospherical changes that are generally experienced. It is essential that the grower should be constantly on the alert and prepared for these changes. During the season we have just been passing through, when practically all growth has been in a more or less dormant or semi-dormant state, quiet temperatures have been correct, but now slightly higher temperatures are needed all round, and it is when treating the houses thus that harm may soon be done, unless great discretion is exercised. Frequently at this season a very cold morning is closely followed by bright sunshine, and the fires should be so banked at night that the pipes have a good heat early in the morning, as just about sunrise is when we experience the coldest time. Then if it promises to be a bright morning do not make any attempt at starting the fires, because if they are disturbed you lose heat when you want it most, and gain it by the time the influence of the sun is working, and thus the houses soon become veritable ovens, very detrimental to the plants. During those bright mornings it is often-times impossible to admit much air to counterbalance the heat from the pipes and sun, as the wind is generally north or north-east, and genial temperatures cannot be obtained when much of that air is admitted, so the point is to have sufficient heat in the pipes to maintain the morning temperature, and then get rid of pipe heat as quickly as possible when the sun rises. How well this may be done greatly depends on the boilers in use. Since we have used a Robin Hood boiler we have been able to follow this idea much more accurately than we could when using saddle boilers. With this make we can lose or gain the heat very quickly, and both advantages are of great importance, especially at this season. We all know that many bright days are followed by very cold evenings, and if the man in charge of the fires takes any notice of the thermometer in the houses, he may not think it necessary to start getting up heat early enough. But the sun goes down, and houses that have been standing at between 80° and 90° early in the afternoon fall to 60° or perhaps lower before dark, and then the fires are rushed on, and a rise in the temperature takes place. This is not right; the fires should be started earlier, so that the pipes contain enough heat to make the fall gradual. In my experience this has

been the best way of promoting good temperatures at this season, the plants getting the benefit of the sunlight while the houses are still comfortable.

STIPPLING.—This is an important item in making good growing temperatures in most of the houses. I do not like to have to run the blinds down too early in the morning, and if a little stippling is put on the houses the temperature can be run up with sun heat, and no harm accrue to the plants. Then they can be raised again earlier in the afternoon than would be possible without some shading on the glass. I do not advise it being put on thick: just a faint covering over the inmates that object to much direct sunshine suffices. What we use at Gatton is only ordinary flour and water, mixed thin. That will be found to adhere, and if the glass is clean it will last the season. One thing in favour of this shading on wet days is that it is so transparent that little light is impeded. All shadings should now be fixed ready for use.

A gradual rise in the temperatures may now be commenced, increasing it as the days lengthen and the sun gets more power. It will also be beneficial to see that the houses are maintained in a more humid state, carefully observing before damping down late in the afternoon if there is any probability of a cold night.

DENDROBIUMS.—Towards the end of the month, many of these will be in a sufficiently advanced state of growth for the work of re-potting or surfacing to be taken in hand. In going through a collection of these it is not desirable to take them just as they come. The right time to pot is when new roots are in evidence at the base of the young growth, and some of the strong growing varieties will attain a height of eight or nine inches previous to rooting, and until then the grower should wait: if the plant has flowered this season. I have found this is not so important when dealing with young stock that have not been through the trying period of flowering. After a Dendrobium has been allowed to flower heavily, and perhaps may have been taken to an exhibition, its vitality is greatly reduced, and any little indiscretion, such as premature potting, will soon be seen in the ultimate condition of the plant. Again, by waiting for that time when new roots are ready to push out round the collar, the chances of losing the young growth by rotting off is reduced to a minimum. We generally make a point of getting all the young stock done first, and then go on and pot all that are ready of the flowering plants, picking out the others from time to time as the growths advance.

The compost we use is made up of equal parts of good fibrous peat and chopped sphagnum, mixed together with plenty of sand and small crocks. In all cases we now use ordinary pots, in which a few crocks are first placed; then they are about half filled with chopped rhizomes, and I do not think any Orchids appreciate rhizomes more than these. Vigorous young plants

that only want potting on to allow further development, and not because the compost is in an exhausted or sour state, should be potted without much disturbance of the bulb, beyond the removal of a little of the surface, and the liberating of a few roots around the sides, so that they may quickly enter the new material. This also applies to larger plants that are in good robust condition, providing the soil is in good order. The most difficult problem is to know what is best to do with plants that show a gradual deterioration during the past two or three seasons. If they are retained at all as plants pull them to pieces, and remove all back bulbs, retaining not more than two behind the leading one, and then pot up singly in as small pots as possible. At one time I thought specimens could be re-made to advantage in this way, but I think now that I know a far better plan, which I will explain further on. Potting should be done rather firmly, keeping the base of the new lead just a shade below the rim of the pot. We find that from this compost enough moss generally grows for their well-being.

After potting is the most critical time in the whole year, especially if we should experience a cold and dull time, and it requires much discretion to known when the plants should be watered. If the pseudo-bulbs are allowed to shrivel much, a good portion of the work of the roots will be taken to restore the shrivelled bulbs, thus robbing and checking the young growths at the outset, unless chemicals are resorted to, and I strongly condemn their use. After such a check the growth will never attain such proportions as they would have done if the pseudobulbs had been kept in a plump state. Sufficient water should be given to prevent the pseudo-bulbs from shrivelling but no more, until the roots have well extended and entered the new material. After watering be very careful that the temperature does not fall below 65° at least, 68° as a minimum will be preferable from now onwards. As the season advances and the roots take a good hold of the compost, gradually increase the supply of water still allowing the plants to become fairly dry before watering till June is well in, but during that month and the next, if they are growing well, never allow them to become quite dry.

If a stock of vigorous plants is to be always in evidence, there should be some young plants ready to take the place of old exhausted ones, I have referred to this point before, and rather than attempt to restore an old exhausted plant I would chop it up for stock, and pot up one that has been previously propagated to take its place. If specimens are required, grow on propagated pieces till they have made growths at least 12 inches long, which can be done while the plants are in pots not more 4 inches in diameter. By placing several of these together a fine healthy specimen can be produced, with a full life before it, of course taking the precaution that they were all propagated from one plant. I have proved this to be a much quicker process than trying to restore a worn out plant.

Species, such as D. crassinode, D. Wardianum, D. Findlayanum, that are given the credit of dying out after a few seasons, can be made to grow freely if they are only rejuvenated by propagation from time to time. The process is so simple and takes up so little room that it has always been a puzzle to me why growers will labour on with worn out plants. Any node that has not produced flower will produce growth. As a rule the higher nodes break much quicker than those towards the base, so for preference choose the higher ones, as they also generally come stronger. Cut the bulbs up into single nodes, leaving most of the stem below the node to allow of it being placed upright. Pots or pans filled with sand is all that is necessary; slightly press the severed portions into the sand, so that the node is not buried, label correctly, and stand them in a hot moist house. A shelf in a propagating house in an ideal place for them, some will come away quickly and others will remain dormant for a considerable time, but they invariably come, and if a few are done each year there are always young plants at hand to take the place of those that have been flowering heavily for several seasons and are exhausted.

CALANTHES.—Most of the deciduous section of this popular genus will be starting and ready for potting towards the latter part of this month, though some of the late flowering varieties will be better potted a week or two later. A great deal depends on the position in which the bulbs have been placed since they passed out of flower, as to whether they will be ready for potting about the third week in this month or early in April, but when the young growths are about an inch in height is the time to pot. The compost used by us is made up of two parts loam and one part good leaf soil with plenty of coarse sand and small crocks. A fair drainage is essential, but I do not believe in half filling the pots with drainage. Calanthes want more soil than could then be given, though some of the weaker growing varieties, such as Victoria-Regina, Oweniana and Sandhurstiana, require more drainage than do Veitchii, Bryan, Alpha, Bella and others. And when seven inch and larger pots are used, in which several bulbs are grown together, more drainage should be given, I prefer using four to six inch pots, then the drainage for the strong growing varieties should be rather less than one third of the depth. Retain about two inches of the old roots, as they will be found very helpful in giving a certain amount of rigidity to the bulbs. In addition to this the long bulbed section should have the support of a neat stake. Pot firmly, keeping the soil below the rim of the pot, the base of the new growth being just below the level of the compost. The materials should be fairly dry when used containing only enough moisture to make it work nicely.

My reason for preferring small pots is that I like to have one bulb per pot to start with, as when grown thus the light has a much better chance of getting round the plant, a very important point. The single bulb

frequently breaks double, and then there is a very full pot and in most cases we get from two to five spikes per pot on the strong growing varieties. Again, the spikes are generally stronger, and by not being crowded the bulbs are better ripened, while small pots can be staged much better for effect. In fact I consider it much easier in every way to grow them singly. When potted, give them a sunny position in a humid house, where the stove temperature is maintained, and practically no water will be required for some considerable time. When the soil has become exhausted of all moisture, a watering may be given, and by this I mean more than by saying water when they become dry. Damping between the pots will be helpful, but direct watering should be avoided as much as possible for some time. This course should be followed till the growths have got well away, up to the time when the leaves begin to unfold, and then rather more water will be needed, but even then allow them to become well dry first. As the growths develop and the roots have well entered the compost, increase the supply, yet allow them to become fairly dry before watering, right up to the time when indication of swelling appear at the base. From then till the new bulb is completed they should never be allowed to become dry at the root. Although I advise giving them a sunny position when first potted, to ensure a strong sturdy growth, they should be given protection from strong sunshine as soon as the foliage begins to expand, increasing the amount as the season advances.

THUNIAS.—These should have attention this month, and the same compost as given for Calanthes will be found very suitable. Ordinary pots are ideal receptacles, using a drainage of crocks not quite one-third the depth of the pot. The best results are attained when they are repotted annually. All the old bulbs and most of the old roots should be cut away, retaining enough to hold the plant in position. Pot firmly, keeping the compost below the rim of the pot, and secure each bulb to a stake. Place the plants in a very sunny position close to the glass in a hot moist house. It is well to grow them quickly, yet it is most important that the growth is hard. If this compost is used, and they are not subjected to shade till the flower heads can be felt, the majority of the growths that are strong enough will flower, and in most cases the growths will not be 18 inches in length. When growing them exposed to much sunshine it is very important to see they do not become dry at the roots, otherwise towards the end of April the foliage will soon be disfigured through scorching. For sometime after potting they will require very little water, but as the growths lengthen and the sun gets stronger, gradually increase the supply.

CATTLEYA LABIATA.—This fine species will now be starting into growth, offering a favourable time for any necessary repotting work being done. Use a compost of fibrous peat two parts, chopped sphagnum two parts, and

one part leaf soil, mixed together with some small crocks and sand. I do not advise disturbing plants that are in good condition. If the present pot is large enough to carry the plant another year, and the compost is sound, some of the surface material may be renewed without any check being given. Vigorous plants that only require potting on account of the size of the pot should be carefully taken out, smashing the pot rather than break any roots, and not disturbing the ball more than possible beyond the removal of some of the surface soil. Plants showing signs of deterioration should be carefully taken apart, cutting off all useless back bulbs, and potting them in the smallest pot possible. Place a few crocks first, then complete the drainage with rhizomes. Weakly plants with little root require more drainage than the stronger ones, and the grower must decide plant by plant how much drainage is needed. Pot fairly firmly, especially the strong healthy plants and those that should not want potting again for at least two years, leaving enough room for a surfacing of chopped sphagnum. They will not require much water till the growths lengthen out. Frequent dampings between the pots will be very helpful in giving them a good start.

ODONTOGLOSSUM CITROSMUM.—After their long rest growth-activity is now apparent, and rather more water should be given than they have been receiving since the completion of last season's growth. Still allow the plants to become well dry before watering till the flower spikes show, and then the supply may be increased considerably.

MILTONIA VEXILLARIA.—Plants growing well should now be afforded more water, maintaining this course right up to the flowering time. On favourable days spray them over head, and damp frequently between the pots.

ODONTOGLOSSUM HOUSE.—During bright days the Odontoglossum house should be sprayed over early enough for the leaves to dry before night.

HABITAT OF ODONTOGLOSSUM CRISPUM.

(*Concluded from p.* 37).

3. CHIQUINQUIRA REGION.—The group of mountains which extend between Simijaca and Puripi and in the direction of Sabaya, constitutes what I consider the third region. The O. crispum coming from here is known in commerce under the name "Chiquinquira type." The flower, although of fairly regular form, is generally smaller than that coming from the Pacho district, but it completely makes up for this little defect by the length of the floral stalks, which often extend more than six inches beyond the leaves before the formation of the first buds. This peculiarity ought to be taken into serious consideration by those who devote themselves to the special methods of culture for cut flowers, for it is incontestable that long and flexible flower-stalks are much preferred by florists who wish to give to their creations a real artistic stamp.

The great notoriety attaching to the third region was caused by the discovery of varieties with large spots. Although I was one of the first, if not the first, to explore these mountains, I must state that the first to put me on the track was poor Millican, long since dead. He had previously explored a part of the mountains, round about Puripi, of which he speaks elsewhere, if I remember rightly, in his book *The Adventures of an Orchid Hunter*.

My first importations arrived in Europe towards the beginning of 1895, and everyone recalls the great sensation caused by the very beautiful varieties shown several months later at the Temple Show, and afterwards at other meetings of the Royal Horticultural Society.

The large-spotted forms are not found uniformly distributed throughout the zone; they have their home only on certain mountain sides. This explains why some importations produce more varieties than others although all are collected in the same group of mountains. Under exceptional circumstances one meets with forms of O. crispum beyond comparison in the really remarkable beauty of the flowers, rivalling even the marvellous forms of Pacho.

Among other species which are found here, more or less abundantly, with crispum are O. gloriosum, O. Lindleyanum, with the variety mirandum, O. Hunnewellianum, and, in a very restricted district, O. triumphans.

4. VELEZ REGION.—The O. crispum found in this region occur principally in the high mountains which surround the little village of Bolivar. They are known by the name "Velez type." With the exception of a small chain of mountains extending from the Valley of Jesus in the direction of Sabaya, in which the type is regular, the O. crispum collected round about Bolivar are mostly poor. The flower stalks are weak, often shorter than in the Chiquinquira type, and the flowers, with certain rare exceptions, below the average in merit. In this region O. Hunnewellianum flourishes, in company with O. gloriosum.

FLORENT CLAES.

ODONTOGLOSSUM LEAVES DECAYING AT THE TIPS.

THE correspondent who, at page 62, asks about the cause of his Odontos "tipping" and losing their leaves, wishes for the opinion of other growers. I am very successful with mine, and I think only because I do not let the temperature run below 50° in winter, and take care that the house is comparatively dry by night. If moisture remains on the leaves all night, at the low temperature of 45°, it is sure to set up rot at this time of the year. Of course later on it will not matter, but in winter everything depends upon the question of moisture.

ZIBA A. WARD.

Cringlewood, Northenden, Cheshire.

ODONTIODA BRADSHAWIÆ.

Our last issue (p. 40) contained a brief description of the brilliant Odontioda × Bradshawiæ, for which Messrs. Charlesworth and Co. received a First-class Certificate at the R.H.S. meeting held on January 10th last, and now we have much pleasure in illustrating it, our figure being prepared from a photograph of a single flower received from Messrs. Charlesworth and a reduced drawing of a photo of the entire plant as exhibited. It is, of course, impossible to convey an idea of the brilliant colour in black and white, and we may add that it is a colour that does not photograph well: but Messrs.

Fig. 9. Odontioda Bradshawiæ.

Charlesworth have given a colour-photograph of a single flower in their new Catalogue, just issued. We need not add much to the description already given, as the figure speaks for itself. The prevailing colour of the sepals and petals is a shade of cinnabar-scarlet, with light yellow markings on the lip. It is a worthy companion to the brilliant O. Vuylstekeæ, of which a figure in its greatly improved condition was given at page 217 of our last volume. It will be interesting to see what the plant develops into when it becomes stronger. When the brilliant Cochlioda Nœtzliana has been crossed with other forms of Odontoglossum crispum a considerable amount

of variation may be expected, and it will be interesting to watch the course of future developments.

We have now four forms of this curious hybrid genus, the original O. Vuylstekeæ, raised by M. Ch. Vuylsteke from Cochlioda Nœtzliana and Odontoglossum Pescatorei, O. heatonensis (Odontoglossum cirrhosum × Cochlioda sanguinea), O. Bohnhoffiæ (O. cirrhosum × C. vulcanica), and the above-named O. Bradshawiæ, the three last all having been raised by Messrs. Charlesworth.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on February 12th last, when there was a remarkably fine display of Orchids, including two very interesting novelties in Cœlogyne × Colmanii and Odontonia × Elwoodii. It is said that no fewer than 45 subjects were entered to go before the Orchid Committee, though only four gained Certificates. The awards consisted of one First-class Certificate, two Awards of Merit, one Cultural Commendation, and ten Medals.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), staged a very fine group, to which a Silver-gilt Flora Medal was awarded. It contained a number of good forms of Cattleya Trianæ, white and coloured, a fine series of Lycaste Skinneri varieties, the brilliant L. × Balliæ, L. × Imschootiana amabilis, some good Calanthe × Veitchii, and, among other things, some beautiful Odontoglossums, the more noteworthy being O. × amabile punctatissimum, a densely spotted form, a very richly-coloured O. × Othello, O. × Lambeauianum, and O. × venustulum var. Apollo, the latter a beautiful cream-white form blotched with purple, which gained an Award of Merit.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), received a Silver Flora Medal for a fine group, containing numerous good Cypripedes, Cattleyas, and Odontoglossums, specially noteworthy among the latter being O. × loochristiense Tracyanum, O. × Wilckeanum Goodsoni, and O. × Othello var. G. E. Day, the latter a fine form, very heavily blotched with chestnut brown. There were also Masdevallia macrura and M. × Hincksiana, Lycaste Skinneri, Ada aurantiaca, Angræcum citratum, and others.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), received an Award of Merit for Cœlogyne × Colmanii (C. speciosa ♀ × C. cristata alba ♂) an interesting and beautiful hybrid which is described and figured on page 73. Flowers of C. speciosa and the typical C. cristata were also shown for comparison.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), sent Vanda teres alba, a beautiful albino with only the faintest trace of pale lilac in the lip and some light yellow on the disc.

H. J. Bromilow, Esq., Rann Lea, Rainhill, Lanc. (gr. Mr. Morgan), sent Cypripedium × falshawense Bromilow's var., a fine form.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent Lælia anceps Hollidayana Theodora, a beautiful broad-petalled white variety, a very small form of Odontoglossum × Adrianæ, raised from O. × Hunnewellianum × O. crispum Raymond Crawshay, which may improve as it gets stronger, and a good white Odontoglossum raised from O. crispum × Wilckeanum, and labelled as the first-raised Odontoglossum crispum.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent Odontoglossum × Othello Fowler's var., bearing two fine spikes of cream white flowers, blotched with cinnamon brown on the sepals and with purple on the base of the lip, and O. × Cobbiæ (amabile × Pescatorei), a pretty lilac-rose flower, richly marked with purple, and with the apex of the lip light yellow.

Dr. Hodgkinson, The Grange, Wilmslow (gr. Mr. Woore), sent Cypripedium insigne McNabianum, with the blotches of the dorsal sepal nearly confluent, and the petals also very dark.

G. W. Jessop, Esq., Cliffe Cottage, Rawdon, sent Cypripedium Fairrieanum Lucifer, a very dark form.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent Odontoglossum crispum Miss Little, a pretty white form.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), staged a small group of Cypripedes, including two plants of C. venustum Measuresianum, C. × gemmiferum, C. × Wottoni, C. × Leoniæ, C. × Leander Cambridge Lodge var., C. × macropterum, C. × Atys var. rubrum, and others.

F. M. Ogilvie, Esq., Oxford (gr. Mr. Balmforth), showed a fine example of Cypripedium × aureum Hyeanum.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya chocoensis var. Mrs. Francis Wellesley, a beautiful form with white sepals and petals, and a light rose stain in front of the yellow disc of the lip, the handsome Cypripedium × Æson giganteum, C. × Tracyanum, C. × Ville de Paris var. magnificum with four flowers, and C. × aureo-Spicerianum, forming a choice little group.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), sent three plants of the handsome Cymbidium × Holfordianum (grandiflorum ♀ × eburneum ♂), with flowers of each parent for comparison.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a remarkably

fine and effectively-arranged group, which gained a Silver-gilt Flora Medal. It contained many very beautiful things, several of them arranged in batches of many plants, these including a series of the very brilliant Lælio-cattleya Charlesworthii, L.-c. luminosa, Brassocattleya Thorntoni, Odontoglossum crispum, including some spotted forms, the variable and beautiful O. × Rolfeæ, Cattleya × Enid, and C. × Octave Doin, with some Platyclinis glumacea in front. Other interesting things were Odontioda heatonensis, O. Bohnhoffiæ, Odontonia Elwoodii, a very interesting hybrid between Odontoglossum cirrhosum and Miltonia Roezlii, which is described at page 90, Xylobium leontoglossum, Dendrobium atroviolaceum, Odontoglossum × mulus, O. × Lambeauianum, O. × Wilckeanum raised in the collection from O. crispum ♀ and O. luteopurpureum ♂, Lælia albida, Trichopilia suavis, Brassocattleya Warnero-Digbyana, and other good things.

Messrs. James Cypher and Sons, Cheltenham, staged a fine group, which received a Silver Flora Medal. It contained some good forms of Lælia anceps, Odontoglossums, Dendrobiums, Cypripedium × aureum virginale, C. exul, C. × tonso- villosum, C. × vil-exul, C. × Transvaal, C. × Lathamianum giganteum, C. × Mastersio-exul, and others, Sophronitis grandiflora, Masdevallia × Hincksiana, M. gargantua, and other interesting things.

Messrs. Sander and Sons, St. Albans, also received a Silver Flora Medal for a fine group, containing some good forms of Cattleya Trianæ, a very fine Lælio-cattleya Henry Greenwood, some good L.-c. bletchleyensis, Brassocattleya Thorntoni, Odontoglossum × Wattianum princeps, a very fine dark form, some good O. × Wilckeanum, O. × loochristiense nobilius, O. × Harryano-crispum macrochilum, and others, Saccolabium bellinum, Epidendrum polybulbon, and numerous good Cypripedes.

Messrs. James Veitch and Sons, Chelsea, also received a Silver Flora Medal for a fine group, containing some good forms of Cattleya Trianæ, Lælio-cattleya Thetis (C. Harrisoniana × L.-c. Nysa), the very richly-coloured Cypripedium × Tityus superbum, a fine example of C. × Milo, C. × vexillarium, three good forms of C. × Little Gem (Harrisianum superbum × Baron Schröder), and other interesting things.

Mr. A. A. Peeters, Brussels, sent Cypripedium × Leeanum laekenense, a large yellowish form, sparsely spotted with purple on the white dorsal sepal, a beautiful example of Odontoglossum × Fascinator, and three charming forms of O. × Lambeauianum (× Rolfeæ × crispum), of which the variety Idol received a First-class Certificate. It was of excellent shape, and the ground colour rose, heavily blotched with dark claret crimson on the sepals and petals, and with violet-purple at the base of the lip, the front of the latter being white. Another variety had a white ground, very handsomely blotched with purple.

Messrs. J. and A. MacBean, Cooksbridge, exhibited a brilliant group of the handsome Epiphronitis Veitchii, forming a mass of flowers about a yard across, a Silver Banksian Medal and a Cultural Commendation being awarded.

Messrs. Armstrong and Brown, Tunbridge Wells, staged a nice group of Cypripediums, together with Dendrobium × Dominyanum, and a neat hybrid between Lælia flava and L. pumila præstans. Among the Cypripedes we noted a good dark form of C. Fairrieanum, C. Maudiæ, C. × Troilus, C. × Goultenianum, C. × aureum virginale, C. × Minos Youngii, C. × Juno, and C. × nitens Queen of Yellows.

Messrs. Hugh Low and Co., Enfield, also received a Silver Banksian Medal for a bright group, containing Oncidium varicosum Rogersii, Cymbidium eburneum, Angræcum sesquipedale, Odontoglossums, Cattleyas, Dendrobiums, including the curious little D. chlorops, and Cypripedes, noteworthy among the latter being C. × Mrs. Wm. Mostyn, C. × memoria-Jerninghamiæ, C. × aureum Surprise, C. × a. Œdippe, and C. × Euryades enfieldiense, a finely spotted form.

Mr. F. G. Young, St. Albans, also received a Silver Banksian Medal for a good group of hybrid Cypripedes, among which a good form of C. × Milo and a pretty hybrid between C. × nitens and C. Charlesworthii were noteworthy.

Messrs. Heath and Son, Cheltenham, sent a pretty group, including Lælio-cattleya bletchleyensis, Sophrocattleya Heathii, a pretty hybrid described on page 91, an attractive hybrid between Cypripedium concolor and C. tonsum, C. × Lathamianum Thomsonianum and several other good forms.

Messrs. Linden, Brussels, sent Odontoglossum × auriferum (× Halli-xanthum × crispum) a prettily spotted hybrid with bright yellow ground, which is described on page 90, and three spotted O. crispum, two being seedlings raised in the collection, and at present small though good in colour and markings.

M. Mertens, Mont-St.-Amand, Ghent, sent a pretty little group, chiefly Cypripediums and Odontoglossums, including a handsomely spotted form of O. × amabile.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, sent a small group, including a good light form of Cattleya Mendelii, Odontoglossum × ardentissimum, O. × amabile and others, Epidendrum cochleatum, Cypripedium Fairrieanum, C. × Maudiæ, C. × Winnianum, C. × Bassano, C. × aureum virginale, C. × Miss Louisa Fowler, &c.

Mr. John Robson, Altrincham, sent a good Odontoglossum × Fascinator, Cypripedium × aureum Pomona, and three other Cypripedes.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on January 24th last, when the display of Orchids was not large, doubtless owing to the presence of ten degrees of frost, but a few good things put in an appearance. The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. Cowan, Cypher, Keeling, Parker, Rogers, Sander, Shill, P. Smith, Thorp, Upjohn, Warburton, Ward, Williamson, and P. Weathers (hon. sec.)

A. Warburton, Esq., Haslingden, received a Silver Medal for a good group, one of the most noteworthy plants in it being the beautiful Cypripedium × aureum virginale. Awards of Merit were given to Cypripedium × Tracyanum and C. × Miss Louisa Fowler.

G. F. Moore, Esq., Bourton-on-the-Water, received an Award of Merit for Cypripedium × G. F. Moore, a handsome hybrid between C. × Sallieri and C. × Mrs. Wm. Mostyn.

Messrs. James Cypher & Sons, Cheltenham, received a Silver-gilt Medal for a handsome group, in which some beautiful white forms of Lælia anceps were conspicuous.

Messrs. Charlesworth & Co., Heaton, Bradford, received a First-class Certificate for the beautiful Brassocattleya × Queen Alexandra, and an Award of Merit for Cypripedium × Fred Hardy magnificum.

Messrs. Sander & Sons, St. Albans, received an Award of Merit for Saccolabium bellinum giganteum.

Messrs. Keeling & Sons, Bradford, staged a small group of Orchids.

ORCHIDS FOR AMATEURS.

(*Continued from* vol. xiv. p. 347).

THE question of suitable staging is another very important matter when an ordinary greenhouse is turned into an Orchid house. A close, flat-topped stage tends to produce a stagnant atmosphere round the plants, which is particularly injurious to Orchids, and is only partially remedied by the practice, sometimes adopted, of standing them on inverted flower pots. An open trellis-work stage, placed so as to bring the plants sufficiently near to the glass, is of the greatest utility in Orchid culture. But a close-bottomed stage placed some little distance below this, and filled with some moisture-retaining material, such as coke, is also of service, as it gives off a healthy moisture, and cuts off currents of dry air which reach the plants too directly when open stages alone are used. The double stage is now generally acknowledged to be an important aid to successful Orchid culture, if not absolutely essential. The lower stage is, of course, horizontal, but the other should be in steps, to suit the

varying height of the plants, and they should not quite touch anywhere —that is to say, although the supports of the upper stage rest on the lower, there should be an interval of a few inches, so as to permit the air to circulate between them. Slate slabs with iron supports are the best for the lower stage, and the other may be fixed or movable, but a trellis-work of roughly-planed battens, nailed together with cross pieces, and supported on bricks is both economical and efficient.

A few studs and wires from the roof are also useful for suspending small plants in baskets, which, however, should be arranged so as not to drip on to the plants beneath, and not to obstruct too much light.

Paved floors should be avoided for Orchid houses, as affording too little moisture for evaporating purposes. Some good sand thrown on an earth basis and covered with a trellis work is much better. Fluted tiles, like those used for stables, are more durable than trellis-work, and as the interstices hold water they are very suitable for the actual paths, but gravel should be used beneath the stages, in which shade-loving foliage plants can be grown, such as selaginellas, small ferns, pileas, &c., and this will provide a large evaporating surface, and give that genial moist atmosphere so important for successful Orchid culture.

The question of ventilation was dealt with in the preceding paper, but it should be added that the top ventilators should be made to lift up, not to slide down, so that it will not be necessary to close them during rain. Sliding "hit or miss" ventilators are best for bottom ventilation, but if shutters are used a piece of wire netting should be stretched over the opening to keep cats or other animals out.

Potting Orchids.—This is a subject of the greatest importance if a collection is to be kept in thriving condition, and one in which the beginner is apt to make mistakes. It should not be done periodically regardless of other considerations. When the plants begin to grow and produce new roots is the time to repot, if the operation should be required, and on this point the grower must use his discretion. When plants are in this stage he should notice whether the plant has outgrown its pot, and if not whether the compost and drainage are in good condition. In the former case a shift into a larger pot is advisable, but in the latter a little re-surfacing with new compost at most will suffice. If a plant appears unhealthy the compost will probably be in a like condition, in which case it should be all cleared away, all decayed roots cut off, and the plant should then be put into new compost, in the smallest size pot possible.

The potting materials and method of using them have been so frequently dealt with by able writers in the Calendar of Operations that the point may be passed over lightly. Good fibrous peat, with an admixture

of sphagnum moss forms the basis, but in the case of strong-growing terrestrial kinds an addition of fibrous yellow loam is necessary. An addition of oak or beech leaves is sometimes made, but the advantage of this has been much disputed, many considering that such materials are too retentive of moisture, requiring special care in watering. An open compost, with sufficient drainage to allow surplus water to pass away readily, is in any case essential.

The method of potting is best learnt by a lesson or two from an expert friend, and once learnt is as easy as potting any ordinary greenhouse plant. Springtime is the period for repotting the majority, but others will not require attention till later, and many Cattleyas and other plants are found to be most vigorously rooting in the autumn, and this, as already pointed out, indicates the best time for repotting, as the young roots then take hold of the new compost at once.

WATERING.—Be particularly careful in watering after repotting, keeping the new compost on the dry side until the new roots have taken hold of it. The necessary moisture is best supplied by syringing lightly between the pots. The syringe is a useful implement for damping the lower parts of an Orchid house, walls, stages, &c., also for lightly spraying the foliage when such is desirable, but it should not be used indiscriminately as a means of watering plants in pans and baskets, which should be taken down and dipped when necessary. Indiscriminate watering is above all things to be avoided. The plants should be regularly examined, and a good supply given to those that require it, the rest being passed over. Generally speaking the supplies of water should be increased as the plants begin to grow, and we are now approaching the season of renewed activity.

TEMPERATURES will now be slightly increased, utilising the sun's heat for this purpose as much as possible, and avoiding too much fire heat when the weather outside is cold. The blinds will also require to be used on bright days. Next month I may be able to say something about the treatment of newly-imported Orchids. A.

VENEZUELAN ORCHIDS.—Mr. T. W. Brown, who some time ago made a trip to Venezuela, remarks (*Journ. Kew Guild*, 1906, p. 319) that he only found one small Orchid in passing through the dense virgin forest, though the branches were overloaded with Bromeliads, Spanish Moss, Rhipsalis, and other epiphytal plants. "In the drier zone, however, at the head of the valley, between the forest proper and the region of the Cacti, the Cattleyas and Zygopetalums were magnificent." And Mr. Brown recently informed us that a good many fleshy-leaved Orchids of the Pleurothallis group were found with the Cacti, apparently making their growth during the rains, and then taking a long rest.

PHAIOCALANTHE COLMANII.

The annexed figure represents the beautiful Phaio-calanthe × Colmanii, from the collection of Jeremiah Colman, Esq., Gatton Park, Reigate, which received an Award of Merit from the R.H.S. on January 8th last, as recorded at page 49. The photograph was taken by Mr. W. P. Bound, who remarks:—"It was raised from Phaius × Norman ♀ and Calanthe Regnieri Stevensii ♂, the cross being made on March 9th, 1904, the seed sown on July 22nd following, and the plant flowered on January 1st, 1907, and was named by Mr. Colman in compliment to his son, who attained his majority on that day." A flower was also sent, showing the colour to be cream-white with

Fig. 10. Phaiocalanthe Colmanii.

some light purple lines in the throat of the lip. The shape is well shown in the photograph, so that nothing further need be said. It is a charming thing, and from its ancestry we may judge that it will prove to be free-growing and floriferous. It will be noticed that it has reached the flowering stage in less than two and a half years. We have now about half a dozen hybrids between Phaius and Calanthe, but the present seems to be the first in which a hybrid Phaius was one of the parents: also the first in which the beautiful Madagascar P. simulans is represented. The Calanthe parents, with one exception, belong to the C. vestita group.

THE HYBRIDIST.

ODONTONIA × ELWOODII.—Another very interesting Odontonia has appeared, being exhibited at the R.H.S. meeting held on February 12th last by Messrs. Charlesworth & Co., Heaton, Bradford. The parents are Odontoglossum cirrhosum ♀ and Miltonia Roezlii ♂. In its vegetative characters it most resembles the Miltonia parent, also in having a short inflorescence with few flowers—there were two on this occasion—but this character may not be so pronounced when the plant becomes stronger. The colour of the flower is white, with a few purple spots on the lip. The sepals and petals are narrow and acuminate, and the lip rather broader and acute, and thus the shape most resembles the Odontoglossum parent. We hope to see this interesting hybrid again when it becomes stronger.

EPICATTLEYA × BALARUCENSIS.—The phrase "Cattleya labiata reduced to half its size" would almost describe the flower of this curious plant, which we have received from M. F. Denis, Balaruc les Bains, Herault, France. M. Denis states that it was derived from Cattleya labiata crossed with the rare Epidendrum eburneum (*Bot. Mag.* t. 5643). The seed was sown seven years ago, and one of the seedlings is now producing its first scape of two flowers. It is said that most of the pseudobulbs have two leaves, but there are other unflowered seedlings in which most of the bulbs have only a single leaf. Part of the plant is also sent, showing three small pseudobulbs, but the one that has flowered is much stronger. The colour and shape are almost those of the Cattleya parent. It is curious that the influence of the Epidendrum parent should not be apparent in the flower, and we should like to know if other seedlings differ in this respect.

ODONTOGLOSSUM × AURIFERUM.—This is a very distinct and pretty hybrid which was exhibited by Messrs. Linden, Brussels, at the R.H.S. meeting held on February 12th. It is said to be from O. × Hallii-xanthum ♀ and O. crispum ♂, and shows most of the influence of the seed parent, the ground colour being bright canary yellow with a few largish deep brown blotches on the sepals, and smaller more numerous ones on the petals. The shape is good, and the petals distinctly toothed, while the lip is distinctly pandurate, with fringed margin, and a few small brown blotches in front of the crest, and some similar dots on the basal margin.

CŒLOGYNE × COLMANII MAGDEBURGENSIS.—It is interesting to find that Cœlogyne × Colmanii has been raised in another collection. M. Paul Wolter, Magdeburg-Wilhelmstadt, Germany, writes: -"I have in flower the first plant of a hybrid Cœlogyne—C. speciosa × C. cristata alba, quite the same cross as published in the *Gard. Chron.* a fortnight ago (p. 108, fig. 48) as C. × Colmanii. Perhaps it will be interesting for you to see

another flower of this new hybrid, therefore I send you the three-flowered inflorescence of the plant." It arrived too late to be included in our note at page 73, and though a form of the same hybrid is a very distinct variety from that figured. The inflorescence is more elongated and the flowers stand one above another, as in C. cristata, the petals are broader than in typical C. × Colmanii, the crests on the lip longer, and the colour of the flower white, with a deep yellow, not orange-brown, disc. In this the influence of C. cristata preponderates, but the type has retained more of the C. speciosa character.

SOPHROCATTLEYA × HEATHII.—A pretty little hybrid raised by Messrs. Heath & Sons, Cheltenham, from Sophronitis grandiflora ♀ and Cattleya Schroederæ ♂, and exhibited by them at the R.H.S. meeting held on February 12th last. It has flowers of the usual Sophrocattleya shape, and the colour may be described a soft rose, with a light yellow disc to the lip. The plant was very small, and was flowering for the first time, so that the flowers are obviously undeveloped.

CALANTHES.

THE Spring Session of the Devon and Exeter Gardeners' Association opened last evening with an instructive lecture by Mr. T. H. Slade, of the Poltimore Park Gardens, on "The Cultivation of Calanthes." The genus Calanthe, the lecturer explained, required for its cultivation no special compost. An ordinary mixture of soil which would suit many other plants was also suitable for the Calanthe. There were about forty species of Calanthes, but those most familiar to gardeners comprised less than a dozen. The compost or soil most suitable for Calanthes was good loam, a little leaf soil, dried cow manure, and some silver sand. Some growers added peat, but this was not absolutely necessary. He (the lecturer) preferred omitting it. The compost should be rough, and, therefore, should not be sifted; neither should it be too wet or too dry. Clean, dry pots should be used, and there must be ample drainage. After potting, very little water would be required until the new roots began to appear through the soil. All through the growing season an abundance of water must be given to the plants. It must be remembered that the season of growth was not a long period, and that if good spikes of flowers were desired the plants must be treated liberally with liquid manure, as on the size and firmness of the bulb depended the quality of the bloom. In the autumn, after growth was completed, the leaves would gradually ripen and fall off, but up to the time that the flower spikes had begun to appear the plants should be well supplied with stimulants and moisture. When the first blooms had begun to expand, water should be gradually withheld, and when most of the flowers were open the giving of water should have ceased. The decorative

value of Calanthes was well known. From the dry condition of the plants at the roots they suffered less than many other plants used for this purpose. They also lasted longer as cut flowers. Mr. W. Mackay occupied the chair. Mr. Slade showed some very fine spikes of Calanthe × Veitchii.—*Journal of Horticulture.*

ORCHIDS IN SEASON.

SEVERAL interesting and beautiful flowers are sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith. There is a good brightly-coloured form of Cattleya Trianæ with very broad petals, which should develop into a fine thing, being cut from a small plant. Paphiopedilum × Leeanum Cambridge Lodge var. (× Leeanum × villosum) is a remarkably fine thing which has received a F. C. C. from the R.H.S. P. venustum Measuresianum is the rare albino of the species, having lost all the brown markings from both flowers and leaves. The other is a flower from a seedling purchased as Lælia purpurata × Oweniana, though the very dark purple veins of the lip recall some L. Dayana hybrid. It is small and undeveloped at present.

Cattleya Trianæ Miss Margery is a charming light form of the delicata type, sent from the collection of W. R. St. Quintin, Esq., Scampston Hall, Billington, by Mr. Puddle. The sepals and petals are white, the latter very broad and undulate, and the lip lilac-blush with a pale yellow disc.

Flowers of three interesting hybrids are sent by M. E. Cappe, Vesinet, France. Lælio-cattleya Veisenpachii (L.-c. warnhamensis × C. Trianæ) has a flame-coloured flower of good shape, with a shade more purple on the front of the very undulate lip. It is curious how much of the original L. cinnabarina influence has been retained. L.-c. Cappei × Lælia flava has given a brilliant deep yellow flower, much resembling the pollen parent in colour. The flowers, however, are slightly larger, and the lip shows a trace of the original L. cinnabarina shape. The first scape has only three flowers, but, as the seed parent sometimes produces thirteen or fourteen, it is obviously undeveloped, and should be taken care of. Lastly, there are flowers of two seedlings from L.-c. warnhamensis × Lælia purpurata. One has yellow sepals and petals and the front of the lip rich purple (recalling Lælia × Latona). A second is larger and has rosy lilac sepals and petals, and the front half of the lip deep purple-crimson, with a yellow throat. A third, now over, M. Cappe states had pure white segments. He also remarks that the first time they flowered they had only one and two flowers, but this time each has produced a six-flowered scape, making a fine show. All are out of the same capsule. This hybrid is to be called Lælio-cattleya Duquesnei. It is a remarkable case of that variation among secondary hybrids with which we are now becoming familiar.

Flowers of the charming Dendrobium × chessingtonense are sent from the collection of R. G. Thwaites, Esq., Streatham. It was derived from D. × Wiganiæ ♀ and D. aureum ♂, and was described at page 101 of our thirteenth volume. The colour is bright buff yellow, with a reddish maroon, slightly feathered blotch on the lip.

Four seedling Paphiopedilums are sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, by Mr. Rogers. P. Dayanum × P. bellatulum album has given a light-coloured densely-spotted flower like P. × Annie Measures, obtained from the typical O. bellatulum crossed with P. Dayanum, of which it is practically the reverse cross. P. Argus × exul has much of the shape of the former parent, and both the dorsal sepal and petals are closely spotted with dark brown, rendering the flower very effective. One called Bridge Hall seedling (× memoria Moensii × Charlesworthii) is very promising, having a broad round white dorsal sepal, lined and spotted with clear purple, the petals, lip, and staminode also showing some of the Charlesworthii character. The other is from P. nitens × Charlesworthii, and has fewer markings on the dorsal sepal.

ODONTOGLOSSUM × ADRIANÆ.

It is interesting to record that Odontoglossum × Adrianæ has now been raised artificially, a plant having been exhibited at the R.H.S. meeting held on February 12th by De Barri Crawshay, Esq., Rosefield, Sevenoaks. Mr. Crawshay has sent one of the flowers, and states that the plant was raised from O. Hunnewellianum crossed with O. crispum Raymond Crawshay, but the influence of the latter handsome variety seems to have been lost, as the flower is at present small and the markings of quite the ordinary type, the colour being light yellow, closely spotted with brown. From its first appearance in 1897 it has been recognised as a hybrid between the two species mentioned, though we do not know of its having been raised by hand before. The history of this hybrid has already been given (*O.R.* vi. pp. 179, 180), and Mr. Crawshay must be congratulated on having now proved its origin by experiment.

R. A. ROLFE.

HYBRIDISING ODONTOGLOSSUM CITROSMUM.

IN answer to Mr. Boppes' letter in your February issue (p. 47) I beg to say that in June last I fertilized flowers of Odontoglossum citrosmum with the pollen of O. cordatum, and also made the reverse cross. Whilst the capsule resulting from the latter has recently opened and disclosed no (or apparently immature) seed, the one on the O. citrosmum plant is plump, with its entire stem still green and fresh, giving promise of containing seed as evidence of perfect fertilization. It is interesting to note that the growth

which has sustained this effort has not yet matured like others produced last year on the same plant, which has throughout occupied a sunny, airy position near the door of an Intermediate house.

Liverpool. FRANCIS H. MOORE.

NOTES.

Two Meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during March, on the 5th and 19th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The following meeting will be held on April 2nd, on which date a lecture will be given at 3 p.m. on Hybrid Orchids and their parents, illustrated by lantern slides.

The Report of the Council for the year remarks, when speaking of the progress of the Society's new garden at Wisley:—"A contribution of Orchids has been presented to the gardens by W. A. Bilney, Esq., J.P., George Bunyard, Esq., V.M.H., Major Holford, C.I.E., C.V.O., Sir Trevor Lawrence, Bart., V.M.H., J. S. Moss, Esq., and F. Wellesley, Esq., J.P. It will form the nucleus of, it is hoped, a far larger collection in a few years to come." This is quite reminiscent of old times, and Orchidists will now be able to find some attractions at Wisley.

In the annual statement of Revenue and Expenditure we note that the sum of £57 19s. 0d. has been expended for painting Orchid pictures, this of course referring to the Orchids certificated during the year, of which the Society has now such a fine collection.

We note with interest the announcement of a second lecture on Orchids in the R.H.S.'s arrangements, the subject being "Lesser known Orchids," illustrated with lantern slides. The lecturer is Mr. F. W. Moore, V.M.H., of the Royal Botanic Gardens, Glasnevin.

Meetings of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on March 7th and 21st. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

ORCHID EXHIBITION AT HAARLEM.—The fourth Orchid Exhibition of the Dutch Orchidophile Club will be held in the great hall of the Vereeniging Society of Haarlem, from Friday, May 10, to Sunday, May 12, inclusive. Information may be obtained from the Secretary, Jonkheer L. J. Quarles van Ufford, 8, Van de Spiegelstraat, The Hague.

The house of seedling Odontoglossums in the establishment of Messrs. William Bull and Sons, to which we alluded at page 41, is illustrated in the *Gardener's Chronicle* for February 2nd (p. 75). A group of Deciduous Calanthes flowering in the collection of Norman C. Cookson, Esq., appears a week later (p. 91), the plants evidently being very well grown, and producing a fine effect. The photograph was taken by Mr. H. J. Chapman, who gives particulars of his method of culture. One of the chief factors of success is considered to be the proper ripening of the pseudobulbs. The issue for February 16th contains an illustration (p. 99) of a house of Cypripediums in the collection of D. O. Drewett, Esq., Riding Mill-on-Tyne. The winter-flowering species and hybrids are among Mr. Drewett's favourites, and they are evidently well grown by Mr. Renwick.

A photograph of Aërides quinquevulnera is sent by Mr. M. J. Pope, gardener to Mrs. B. B. Tuttle, Naugatuck, Conn., U.S.A. It is a Philippine species, and is producing two fine racemes of whitish flowers with a purple blotch at the apex of each segment. Mr. Pope remarks that it is growing on or rather attached to a block, as all its roots are practically in the air.

Mr. Pope adds:—"I also enclose a picture of Renanthera coccinea, which flowered here last summer, when two and a half feet high. The plant grows here like a weed, in intermediate temperature, always exposed to full sun. Since the picture was taken it has grown another eight inches." The photograph shows a vigorous example of the handsome Orchid named, which seldom flowers here in such a dwarf condition. In fact, it is less frequently met with than its merits deserve, probably because of its climbing habit and the difficulty of flowering it in a dwarf state.

We have received from Messrs. Sander and Sons, St. Albans, the *Addenda to Sander's List of Orchid Hybrids*, 1905 to 1907, containing the additions recorded during 1906. The list is arranged in three Tables, as before, (1) under the name, (2) under the seed parent, and (3) under the pollen parent, the whole occupying 19 pages. It contains a large number of novelties.

ORCHID PORTRAITS.

CŒLOGYNE × COLMANII.—*Gard. Chron.* 1907, i. p. 108, fig. 48.

CYMBIDIUM INSIGNE, Rolfe.—*Rev. Hort. Belge*, 1907, p. 53, with tab.

CYPRIPEDIUM INSIGNE SANDERÆ.—*Gartenfl.* 1907, p. 106, 107, t. 1559.

CYPRIPEDIUM × LEEANUM CLINKABERRYANUM.—*Gard. Mag.* 1907, p. 103, with fig.

CYPRIPEDIUM × MORGANIÆ.—*Gard. Chron.* 1907, i. p. 66, fig. 29.

CYPRIPEDIUM × TAUTZIANUM NIGRICANS.—*Gard.* 1907, i. p. 89, with fig.; *Journ. Hort.* 1907, i. p. 179, with fig.

DENDROBIUM LUTEOLUM.—*Journ. Hort.* 1907, i. pp. 136, 137, with fig.

LÆLIO-CATTLEYA BLETCHLEYENSIS.—*Gartenfl.* 1907, pp. 81, 83, fig. 11.

ODONTIODA BRADSHAWIÆ.—*Gard.* 1907, i. p. 55, with fig.; *Journ. Hort.* 1907, i. p. 113, with fig.

ODONTIODA HEATONENSIS VAR. ST. VINCENT.—*Journ. Hort.* 1907, i. p. 157, with fig.

ODONTOGLOSSUM × CALOGLOSSUM.—*Gard. Chron.* 1907, i. p. 76, fig. 33.

ODONTOGLOSSUM × LAMBEAUIANUM VAR. IDOL.—*Gard. Mag.* 1907, pp. 106, 107. with fig.

ODONTOGLOSSUM × RUBY.—*Gard. Chron.* 1907, i. p. 76, fig. 34; *Gard. Mag.* 1907, pp. 75, 77, with fig.

SACCOLABIUM RUBESCENS, Rolfe.—*Bot. Mag.* t. 8121.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used) Subjects of special interest will be dealt with in the body of the work*].

G. We saw the remark, but do not understand it. It is a latin rule that names whose stems end in "er" take "us" in the nominative, and "i" in the genitive. Cattleya Warneri is correct, not Cattleya Warnerii, and the remark applies to other names having the same ending.

Photographs received, with thanks. I.B, L.L., M.J.P., D.B.C.

I.B. A minute Pleurothallis which we do not recognise, and should like to see when it flowers again. A note on the Dendrobium is postponed.

B. de S. It is difficult to say why the bulbs and leaves of your Cattleya Mossiæ are turning black and dying from such a short description, unless it is the result of a chill. Are the roots and compost healthy? You do not say how long you have had the Cattleyas, nor yet what other Orchids are grown with them. They cannot be grown satisfactorily in a Cool house.

We have received Messrs. Charlesworth & Co's., priced Catalogue of Orchids for 1907, containing a rich and varied selection of species, varieties and hybrids, and numerous photographic illustrations of their houses and of novelties raised in the Establishment. Among the latter may be mentioned the new Odontioda Bradshawiæ figured at page 81 of the present issue, Odontioda heatonensis var. St. Vincent, Brassocattleya Queen Alexandra, Cypripedium × Daisy Barclay, and C. × Fletcherianum, all of which have received Certificates from the R.H.S.

A copy of the interesting and useful Annual, *One and All Gardening* for 1907, has also been sent, containing numerous well-illustrated articles on various horticultural subjects, but without any devoted to Orchids. It is published by the Agricultural and Horticultural Association, 92, Long Acre, price two pence, the Editor being Mr. Edward Owen Greening, F.R.H.S. A copy of *The Potato*, by the Hon. H. A. Stanhope, is also sent. Well written and illustrated, it should be worth much more than the penny asked for it.

ERRATA.

A slight mistake occurred in the article on Odontoglossum crispum. "Lubuchaqué" (p. 36) should be corrected to Subachoque, and "Lupata" (p. 37) to Supata.

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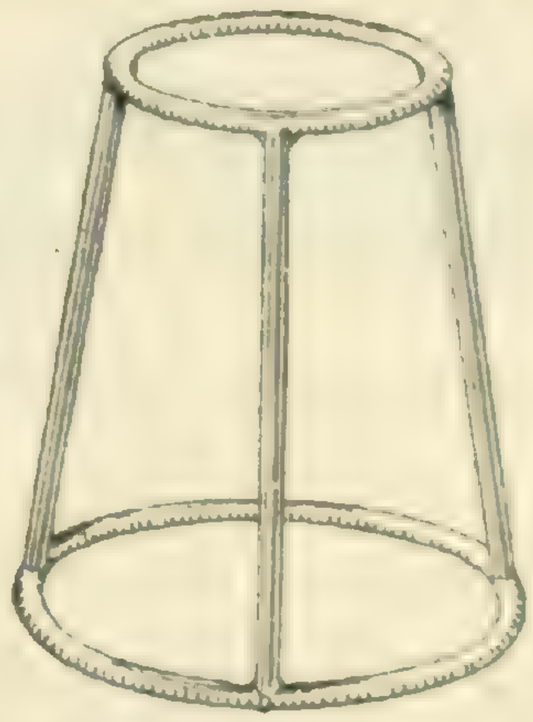

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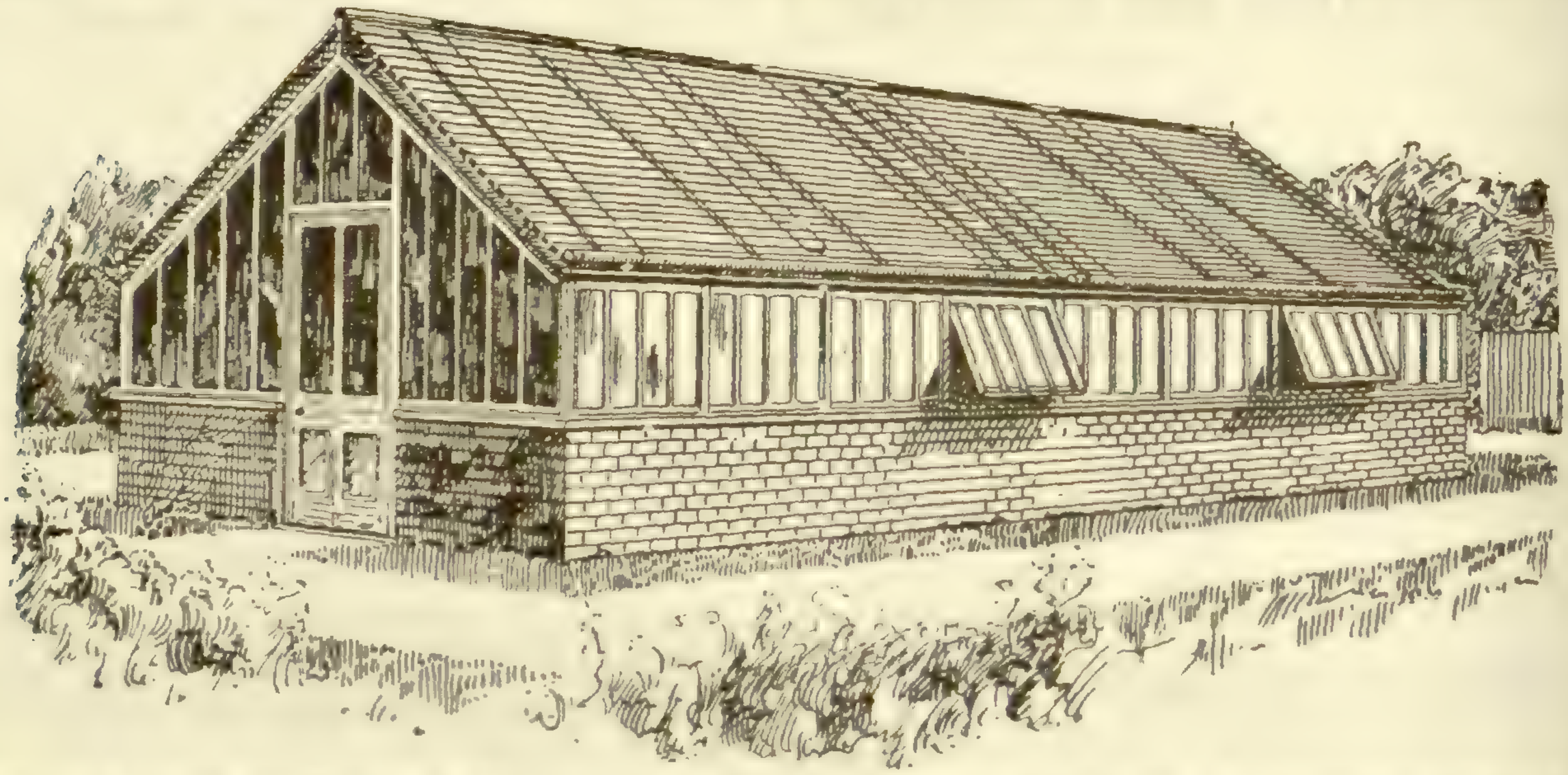

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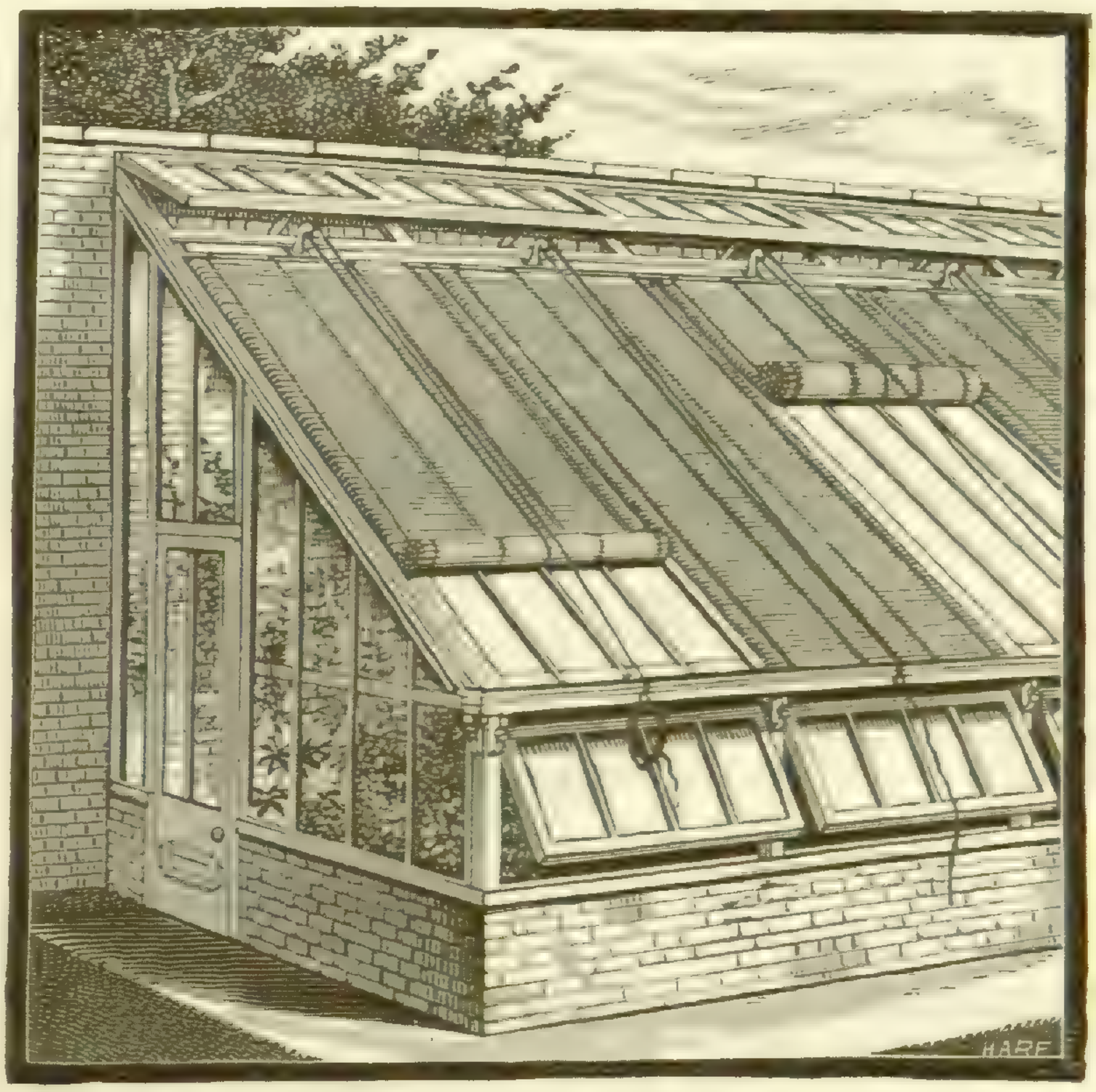

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VOL. XV.] APRIL, 1907. [No. 172.

THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *APRIL*, 1907. [No. 172.

DIES ORCHIDIANI.

THE hybridisation of Orchids continues to progress by leaps and bounds, as I am reminded by the description at page 90 of Odontonia Elwoodii, a hybrid between Odontoglossum cirrhosum and Miltonia Roezlii, raised and exhibited by Messrs. Charlesworth. It is less than two years since the original Odontonia Lairesseæ flowered in the establishment of M. A. de Lairesse, and was figured in these pages (vol. xii. p. 217), and it is probable that others will soon follow, for a note at page 56 of the present volume speaks of hybrids between Odontoglossum crispum and several species of Miltonia in Messrs. Linden's establishment at Brussels, and their flowering will be awaited with interest. Seedlings reported to have been derived from Odontoglossum crispum and Miltonia vexillaria are also in existence, but I have not heard of their flowering yet.

Then we have the very interesting Cœlogyne × Colmanii, which, singularly enough, was raised in two different establishments, and flowered within a few weeks of each other, as recorded last month (pp. 73, 90). It is very interesting to have an illustration of the novelty, which promises to be a useful garden plant, for Cœlogyne cristata, one of the parents, is among the most beautiful and floriferous species we have. I have already alluded to the appearance of the brilliant Odontioda Bradshawiæ, and will only add that it is interesting to see the illustration at page 81. Of course it would require a painting to do it justice, for colour photography does not yet seem available.

I must also mention the remarkable hybrid between Cattleya citrina and Brassavola Digbyana, which was exhibited by Major Holford at the R.H.S. meeting held on March 5th, and received an Award of Merit. It was curious to see the way the hybrid had solved the problem of combining the very diverse habits of its two parents. It could scarcely be intermediate in this respect, unless the forces had been so nicely balanced that it had to grow sideways. Mr. Alexander had been watching the plant for a consider-

able time, and I think he must have arrived at the conclusion that the pendulous habit was "recessive"—that seems to be the word—until the flower appeared, when it suddenly became "dominant," for the bud showed a tendency to hang down, and had to be tied up to a stick. Perhaps by this time the pendulous "unit-character" was beginning to assert itself. But I must not drift into Mendelism, so I will only wonder what will happen when we get a batch of self-fertilised seedlings from it.

We are subject to periodical outbreaks of "nomenclature," and here is the latest:—"Neither the Vienna Congress nor any other congregation of botanists will ever convince practical people that a very large number of the botanical names given to plants are not absurd. . . . All efforts to make the name describe or tell the origin or the distribution of a plant are not only futile, but the result is often misleading." It is nothing new, but these botanists are terrible fellows. They have often been told, but they won't mend their ways. They still go on trying to make the name describe the plant. Only the other day one of them called a plant Cymbidium erythrostylum, because it had a red column, and not long before that he called another Cymbidium rhodochilum, because it had a red lip. He once called an Orchid Coryanthes leucocorys, because it was the only known species in the genus which had the helmet of the flower white. They have always been doing this sort of thing. We have Broughtonia sanguinea and Vanda cœrulea, Epidendrum umbellatum and Dendrobium luteolum, and lots of others, but then these are old names, and were given before it had been pointed out how futile and misleading it all is, so excuses can be made in these cases.

But this is an interruption, and we are keeping the argument waiting. Let us proceed:—"The ugliest thing that has been done lately has been the institution of the jumble name for multi-generic hybrid Orchids. Thus we have Brassocattleya, Brassocatlælia"—and, it might have been added, Epicattleya, Epilælia, Epiphronitis, Sophrocattleya, Læliocattleya, Odontioda, and Zygocolax. "Surely this is ridiculous. It never should have been started. When two so-called genera interbreed that is a proof of their congeneric relationship, and one name should go, at any rate so far as the hybrid is concerned, which should be named after its mother, the father being often conjectural. Is it too late to set this matter right?" Of course not, it's never too late to mend, so let us consider the matter further. Epiphronitis × Veitchii ought to have been called Sophronitis, because Sophronitis grandiflora was the mother, though the plant is, both in habit and structure, like Epidendrum, but then that does not count. Similarly, Epicattleya × matutina is a Cattleya, and Epilælia × Charles-

worthii a Lælia, because their respective mothers were Cattleya Bowringiana and Lælia cinnabarina, yet both hybrids most resemble the father—which, by the way, is not conjectural, being Epidendrum radicans in both cases. Again, Sophrocattleya × Batemaniana is a Sophronitis and Zygocolax × Veitchii a Zygopetalum. Odontioda × Bohnhoffiæ and O. × heatonensis are both Odontoglossums, but Odontioda × Bradshawiæ—the beautiful hybrid figured at page 81—is a Cochlioda, while Brassocattleya is a Cattleya and B.-c. × belairensis a Brassavola. Several Lælio-cattleyas belong to both Lælia and Cattleya, owing to the fact that the reverse cross has also been raised, which makes rather a complication. Lastly, we do not know what Brassocatlælia × Mackayi is, because its mother was a natural hybrid, and we don't know yet whether its grandmother was a Lælia or a Cattleya. I fear I must leave the development of the new system to its originator, for there are a good many other cases where similar difficulties occur.

Our reformer has not quite finished. He says the botanist is "too often obstinate, and will continue to give to mongrels such absurd names, while *we* (the italics are mine) continue to make gardening look ridiculous by accepting them." Then another reformer takes up the running, and alludes to the inconsistency and cumbrousness of the nomenclature of hybrids, "due to the non-observance of the rules laid down for the guidance of the committees and of raisers in general." . . . "The Orchid Committee," he says, "sets a bad example, and does not do what it might do in regularising and reducing to system the erratic nomenclature of which complaint is justly made." Now this begins to look promising. "Instances," he says, "are so numerous and so notorious that it is not necessary to cite many of them." So he cites one only, namely Odontoglossum Smithii. And he says that "the unsuspecting botanist would naturally take a plant named Odontoglossum Smithii to be a distinct species, and . . . he might waste much time in the futile attempt to ascertain what O. Smithii was, where it came from, and where it was described. But if it had been called John Smith, all this time and trouble would be saved." Would it really? Would it have told him one of the three things mentioned? I doubt it. But if it had been called O. × Smithii (with the sign ×), in accordance with the rules to which he had just alluded, and in accord with the Vienna Rules (see page 358 of your last volume) he would at least have known that it was a hybrid. Then he says "it would be easy to act on the rule which exists already, which forbids the application of a specific name in Latin to a plant of garden origin." Let him read the Vienna Rules again, and perhaps he will discover his mistake. But I have already dealt with this question at page 34, and indicated the

principal causes of the deplorable confusion which exists in the nomenclature of garden plants—not hybrids alone be it noticed.

I have more than once pointed out that a vernacular system of nomenclature not only does not prevent confusion, but is a direct incentive to it, and I could give plenty of evidence in support of it, but I have not time or space to-day. But I will conclude with a remark I once heard made by an eminent hybridist when the vernacular system began to be adopted. He said: "Don't give personal names, for hybrids are being used again as parents, and some of these days we shall read of a hybrid between Cattleya William Brown and Mary Jones, the latter being the father."

It was a telling argument against the use of unmodified personal names, and was doubtless not intended to appear in print. But it was bound to come, sooner or later, as ordinary arguments seem useless. And it has kept for a good many years, and now appears with only the actual names altered.

I am forgetting that our reformer has not quite done. He says "Every day we hear complaints about the barbarous Latin names given to plants, but . . . we find no attempt made by the committees of the R.H.S. to check the practice. They are ready to shout with the multitude, but not to act with the few, and until they carry precepts into practice, so long will outsiders have reason to rail and protest." We must get him on one of these Committees.

ARGUS.

DENDROBIUM SEEDLINGS AND MENDELS "LAW."

I AM sending you two series of blooms of Dendrobium seedlings, which are interesting as showing how little the Mendelian "laws" of heredity, as I understand them, can be applied with practical value to the hybridisation of Orchids.

One lot of flowers have been cut from a batch of plants raised out of the same seed pod, carried on a plant of D. × Wiganiæ pollinated with D. × W. xanthochilum. D. × Wiganæ is the result of crossing D. nobile and D. signatum together, and one might have expected from crossing this hybrid with another hybrid having the same origin (the two came out of the same seed pod) to get plants reverting to pure D. nobile, and others to pure D. signatum, but nothing of the kind has happened. There is, as you will observe, some range in the variety, but all excepting one are clearly varieties of D. × Wiganiæ; in other words, this hybrid has come true from seed. The one exception is certainly very distinct, and more the colour of

nobile, but could not possibly be mistaken for that species. Besides those sent (and each flower is from a different plant), we have flowered two or three dozen similar, and also one pure white variety with a dark eye, which, like the exception sent, may be regarded as a "sport," whatever that may be, but does not support any law of reversion.

The other flowers sent are interesting as showing that a white hybrid "sport" and a white species crossed together do not yield white seedlings, or have not done so in this case. The flowers are cut from seedlings resulting from the crossing of D. × Wiganianum album with D. nobile virginale. D. × Wiganianum album is a white sport out of a number of seedlings from D. Hildebrandii × D. nobile albiflorum, both of which plants have a fair amount of colour. You will see that all the flowers sent are more or less delicately tinted, but none of them could be taken for D. nobile, although there is three-quarter nobile in their composition, nor yet could any of them be mistaken for D. Hildebrandii, although I will admit that some of them merge closely to some of the varieties of D. × Wiganianum. It will be fair to add that D. × Wiganianum album has two faint lines of colour deep in the throat, and could not therefore be strictly called a pure albino. We were nevertheless expecting to get some white seedlings from it, and have been in consequence disappointed. We have, as you know, already raised D. nobile virginale true from seed.

I also enclose a few flowers derived from D. nobile Ballianum × D. n. murrhiniacum, which have reverted to ordinary coloured D. nobile. It is interesting, though sad to us, to know that ordinary coloured D. nobile comes from the crossing of two such closely allied pale varieties, both of which have lost the dark maroon disc which is such a conspicuous feature in ordinary D. nobile.

Streatham. J. M. Black.

The D. × Wiganiæ seedlings sent are twelve in number, and eleven of them would certainly be taken for D. × Wiganiæ, pure and simple, the variation being confined to slight differences in size, in the depth of the yellow colour, and in the size of the maroon blotch. The palest is nearly ivory white. The one exception is a little larger, and has a whitish ground colour, suffused with light rosy purple at the apex and margin of all the segments. The lip is also slightly more acute, but the blotch is quite of the D. × Wiganiæ type.

Of the cross D. × Wiganianum album × D. nobile virginale there are twenty-two seedlings, ranging from blush white to rosy lilac in the sepals and petals, and all without a maroon blotch on the lip, but in each case there are radiating pink streaks on either side of the fleshy area at the extreme base, and these vary considerably in size and a little in colour. All

can easily be recognised as seedlings out of the same pod, though no one would have guessed the parentage without the record. D. × Wiganianum, it may be added, is synonymous with D. × Ellisii, which was described at page 37 of our ninth volume.

The three seedlings from D. nobile Ballianum × D. n. murrhiniacum can be briefly described as ordinary D. nobile, in other words both the colour and the maroon blotch have re-appeared. It would be interesting to see if D. nobile Ballianum self-fertilised would behave in the same way, or whether it would keep true like D. n. virginale.—ED.

ORCHIDS IN SEASON.

THREE beautiful Odontoglossums are sent from the collection of H. S. Goodson, Esq., Fairlawn, Putney Hill, by Mr. Day. O. × Wiganianum Goodson's var. is a handsome bright yellow flower, heavily spotted with very dark brown on the sepals and petals, and less so on the sides of the lip. O. × eximium Goodson's var. has the light yellow ground colour nearly obliterated by the large suffused red-brown blotches, except at the upper fourth of the segments. Both were exhibited at the R.H.S. meeting held on March 5th. The other is a nearly pure white O. crispum, the exception being a few brown streaks on the stalk of the lip. But for this character it would be referred to O. c. virginale, the albino of the species.

Several interesting and beautiful flowers are sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith. Cymbidium × Holfordianum Cambridge Lodge var. is a very fragrant and handsome hybrid from C. eburneum × C. Tracyanum, and most resembles the latter, except in its light yellowish white ground colour. Cattleya × Lawreglossa is a brilliantly-coloured hybrid from C. amethystoglossa × C. Lawrenceana, whose characters it combines. The others are Odontoglossum odoratum, obtained under the name of O. Arnoldianum, which is synonymous, a small O. × Humeanum, Oncidium superbiens with whitish yellow apex to the petals, Paphiopedilum × Salus, P. × Vidor, and the dark, very little spotted, P. × Charles Richman superbum, forming a very attractive group.

A handsome Brassocattleya is sent from the collection of W. Waters Butler, Esq., Edgbaston, Birmingham. It was obtained as a plant of unknown parentage, but we think it is a form of Brassocattleya Maroni (*O.R.* 1902, p. 84), the hybrid derived from Brassavola Digbyana and Cattleya Mendelii. Mr. Butler remarks that it has seven small and three medium-sized bulbs, and is probably eight or ten years old. The colour is bright rosy lilac, with a light yellow disc to the beautifully fringed lip. A pretty light buff yellow flower—one of two produced by the plant at its first flowering—is also sent, and as the cross is given as Lælia Cowanii × L.

Jongheana it is a form of L. × Gwennie, described at page 271 of our twelfth volume. The flower is much larger and lighter in colour than L. Cowanii, but here the resemblance to L. Jongheana ceases, for there is not a trace of its purple colour. A good flower of Odontoglossum luteopurpureum is also sent. The plant was purchased as an imported O. crispum.

Several interesting flowers are sent from the collection of Walter R. Scott, Esq., Craghead, Chester-le-Street. They include the chaste Cœlogyne cristata alba, one of the few absolutely white Orchids, there being not a speck of any other colour visible, the curious Epidendrum cochleatum, with its dark, shell-shaped lip, Dendrobium nobile and D. crassinode, the latter with very dark purple tips to all the segments, Odontoglossum crispum with pure white sepals and petals, and light cinnamon blotches on all the other segments, Cattleya Trianæ from a recently-imported plant, the handsome Paphiopedilum × Calypso, and Lælio-cattleya Glycera, a pretty little hybrid from Cattleya Trianæ and the rare Lælia rupestris (Lindl.), this, and indeed several of the others, having been obtained at the sale of the late Mr. Reginald Young's collection. This hybrid was described at page 111 of our twelfth volume.

Those sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon, include the brilliant Lælia harpophylla, L. cinnabarina, and Sophronitis grandiflora, the very distinct and fragrant Odontoglossum pulchellum, Miltonia cuneata, Dendrobium crepidatum, D. primulinum and D. fimbriatum oculatum, the graceful Platyclinis glumacea, Cattleya Trianæ delicata, with a good rosy form, and another nearly white with a rich purple front to the lip, Epidendrum cochleatum, and a fine spray of E. Stamfordianum, the latter one of three now borne by the plant. A later series contains an inflorescence of the brilliant Renanthera Imschootiana, and Mr. Haddon remarks that there are four plants, each carrying a branched spike. They are grown with the Vandas, and seem to enjoy plenty of heat. The Odontoglossums are now making a fine show, those sent consisting of O. Pescatorei, triumphans, sceptrum, Rossii, Lindleyanum, × Ruckerianum, Hunnewellianum, crispum, and × Adrianæ. The latter, as usual, flowered out of an importation of O. crispum. The remaining flowers are Dendrobium chrysotoxum, D. aggregatum, Epidendrum evectum, Cœlogyne flaccida, Maxillaria variabilis var. unipunctata, Cymbidium pendulum, Rodriguezia secunda, and the brilliant Cochlioda vulcanica.

Some beautiful Odontoglossums are sent from the collection of R. Stewart, Esq., of Glasgow. O. × loochristiense is a very fine form, 3½ inches across, and bright yellow, regularly blotched with brown. One, said to be a hybrid between O. × loochristiense and O. crispum, is much like a small edition of the former, both in shape and colour. The others are a dark O. Hunnewellianum, and what we take to be a cream-coloured form

of O. × Wilckeanum, with a few red-brown blotches on each segment. The two latter are said to have come out of an importation of O. crispum.

Flowers of the handsome Dendrobium × melanodiscus var. Clytie are sent from the collection of the Right Hon. Joseph Chamberlain, M.P., by Mr. Mackay. They were raised in the collection, from D. × splendidissimum grandiflorum × D. Findlayanum, and first flowered about eight years ago. The flower is light rosy purple, with a dark blackish blotch on the orange-coloured lip, which is tipped with purple. The hybrids derived from this cross are remarkably variable in colour.

DENDROBIUMS FROM GATTON PARK.

THOSE who had the good fortune to see the magnificent group of Dendrobiums shown by Jeremiah Colman, Esq., at the R.H.S. meeting held on March 5th last, will know how well these plants are grown at Gatton Park, and we now have the pleasure of noting a series sent by Mr. Bound at a rather later date. There are some very fine forms of D. nobile, including Ballianum, murrhiniacum and the pure white var. virginale, with fine forms of D. × Ainsworthii and D. × Rubens. Then there are some beautiful flowers of D. × Wiganiæ, including a particularly fine form called var. splendens, together with forms of D. Ellisii (Wiganianum), one, called Gatton Park variety, having a bright yellow disc with bright crimson-purple veining on it. D. × Cybele, raised at Gatton Park, includes some very fine forms, one having a particularly broad orange-yellow border round the dark maroon disc, while the segments are suffused with bright purple on the upper part. Lastly must be mentioned four interesting hybrids raised in the collection:—

D. Hildebrandii × D. Findlayanum has the sepals and petals white, more or less suffused with delicate pink towards the apex, and the disc of the lip clear bright yellow. It is a very pretty hybrid, with a good deal of the D. Findlayanum character, and may be called D. BOUNDII.

D. Wiganiæ × D. nobile album (presumably the true albino form) is ivory white, some of the flowers being flushed with purple on the upper margin of the petals, while the disc of the lip is of a clearer purple shade than in D. × Wiganiæ, which it otherwise most resembles.

D. × Curtisii × D. Findlayanum has much the shape of the former, with a suffusion of light purple on the sepals, petals, and apex of the lip, while the disc is light yellow, with a number of bright purple streaks on each side near the base.

Another has white flowers, faintly tinged with purple towards the apex of the segments, while the disc of the lip is light greenish yellow without any trace of markings. It is supposed to be from D. × Wiganianum × D. × Wiganiæ, but the point requires confirmation.

ODONTOGLOSSUM × VUYLSTEKEI VAR. THEODORA.

The accompanying reproduction of this Vuylstekean hybrid will be of interest now that the difficulties of Odontoglossum raising have been fairly vanquished by many of us in England. The parentage has not been satisfactorily proved, but remains as yet uncertain. Originally described by Mr. Rolfe (*O.R.* 1902, p. 99), it was at first thought that it might be O. triumphans × tripudians, but later (p. 170) Mons. Vuylsteke stated that he "never fecundated with tripudians, because its flowers are too small." He had evidently forgotten that he had crossed with it, to raise O. × bellatulum, of whose parentage I have no doubt, having seen hybrids of two other

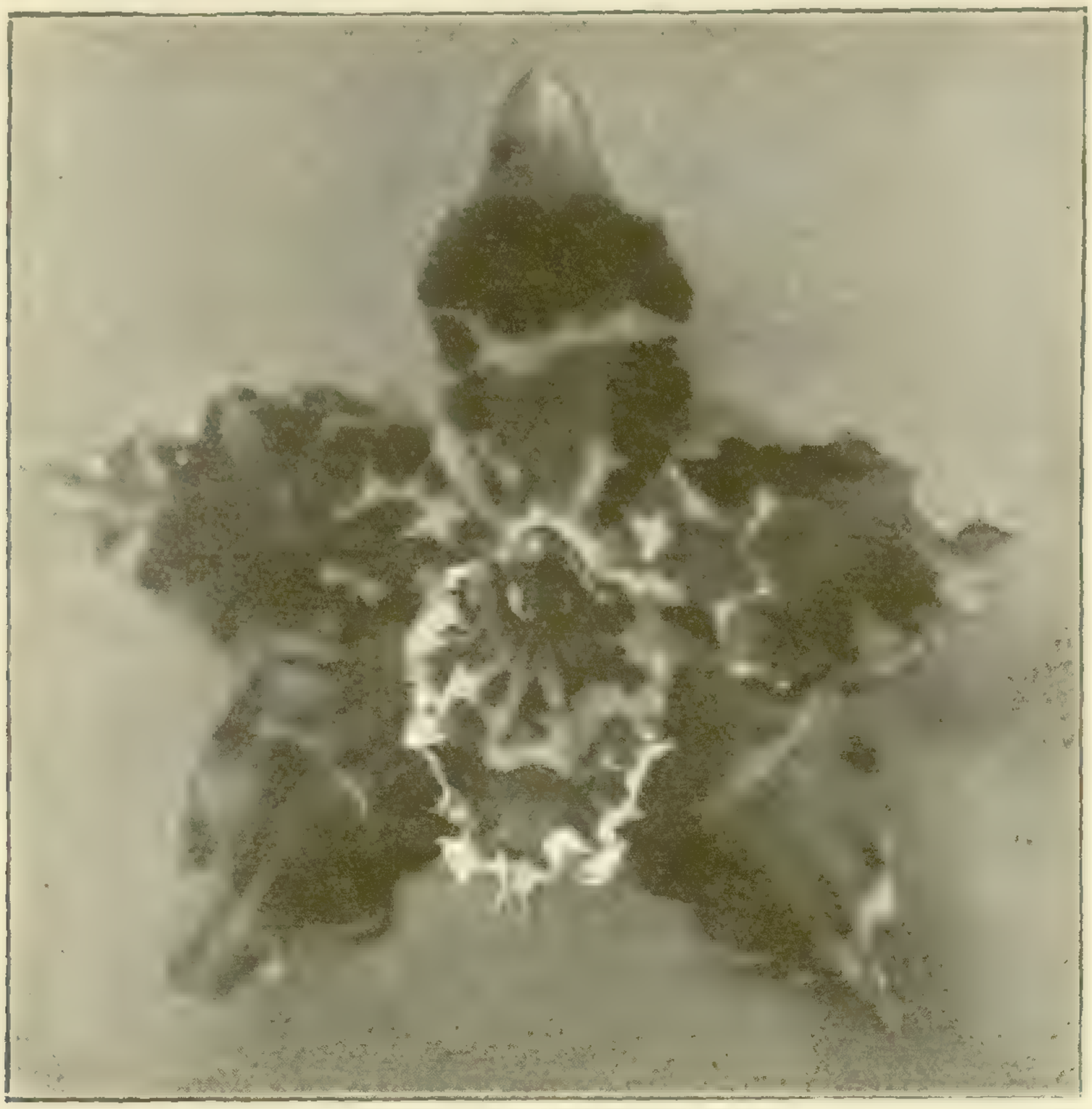

Fig. 11. Odontoglossum × Vuylstekei var. Theodora.

crosses to prove it, one batch being my own raising. In endeavouring to clear up the parentage, Mons. Vuylsteke wrote me on Jan. 14, 1903, that he thought it *might be* O. × Wilckeanum albens and a natural hybrid much like his "× President Zaldhua." This latter plant I hope to see when in bloom, and the former is known quite well (under its *five* different names). The only description I have of O. × President Zaldhua states that it has "almost solid brown sepals, petals with yellow margins and tips." The lip and column are not mentioned, but it sounds very like a fine sceptrum. I cannot think there is any sceptrum in O. × Vuylstekei, for if so, there would be some evidence of its crest in the hybrid. Again,

sceptrum and Wilckeanum albens both have perfectly white columns, but Vuylstekei has a very rich crimson brown headed one, and this points to another source entirely, and that is O. crispum. There is no doubt of their being triumphans in it, and the column thus decidedly gives evidence of crispum. The lip is indisputably that of a fine O. × loochristiense (many of Mons. Vuylsteke's own raising being very similar), and always having a white ground colour, could not have been produced by sceptrum, which *must* influence some of them to be yellow. Again, the colour of the brown blotching in the petals gives evidence of Wilckeanum albens, whose crimson shade of brown is so bright as compared to the ordinary Wilckeanum browns. Reviewing all this by the light of other hybrids which give evidence (both negative as well as positive being valuable), I have come to the conclusion that it was raised from a fine loochristiense crossed by Wilckeanum albens.

O. × loochristiense began blooming out of the crispum importations in 1888, and was not recognised, but called "excellens" for some time afterwards, and only when M. Vuylsteke raised it was it acknowledged by all to be a hybrid of crispum × triumphans, and anent this subject I may refer to my article "O. excellens and O. loochristiense" (*Gard. Chron.* March 16, 1901, p. 166), in which I disentangled these two hybrids. Subsequently to writing that, I found in Baron Schröder's collection a plant that had been bought as a "Nat. Hyb." on May 26, 1888, which I did not see in bloom till Dec. 17, 1901.

DE B. CRAWSHAY.

It seems agreed that O. triumphans is in some way concerned in the parentage of this hybrid, but it may have come through O. × loochristiense. I suggested O. triumphans and O. × Wilckeanum (*O.R.* x. p. 170), giving half O. triumphans and one-quarter each O. crispum and O. luteopurpureum. The suggestion now made would give half O. crispum and one quarter each O. triumphans and O. luteopurpureum. A good way of settling the matter would be to make the cross suggested.—R. A. R.

CALENDAR OF OPERATIONS FOR APRIL.

By W. P. BOUND, Gatton Park, Reigate.

SPRAYING.—This essential aid to healthy growth will soon become general on all the varieties that are benefitted by overhead spraying, but it must only be carried out when the outside conditions are favourable. It is also very important for some time yet that it be done early enough in the day for the foliage to become dry before evening.

Most of the Cypripediums and all the Odontoglossums luxuriate when they can be well sprayed. In the Cattleya houses, especially if these are naturally dry, the plants will be helped considerably with a spraying, but

during this month I would not advise it being done later than one o'clock. Sobralias, Spathoglottis, Epidendrums, especially those of scandent habit. Phaius, Miltonias, Oncidiums that are growing, Cymbidiums, and Cœlogynes will all appreciate judicious spraying. I do not advise spraying Dendrobiums this month unless the weather is very warm and bright. I need hardly say it is most desirable when spraying to miss the plants in flower.

To carry out this operation well and quickly, yet only applying enough water to give a dew-like appearance on the foliage, I know no better appliance than the "Abol Syringe." It is simple and cheap and does not easily get out of order.

SHADING.—As far as possible the varieties that revel in dense shade should be grouped together, choosing the shadiest portion of the house, and then those that want more light and, in some cases, direct sunshine, can be treated accordingly. As I said last month some stippling over the glass is helpful in carrying this out, and it will be well now to put it on much thicker over those that require most shade.

ODONTOGLOSSUMS.—Many of these will be ready for potting now, should they require it, using a compost of two parts peat, two parts chopped sphagnum, and one part leaf soil, with some coarse sand and small crocks. The pot should have a few crocks placed in first, completing the drainage with rhizomes; a good healthy plant does not require drainage of more than one-third the depth of the pot. I know that many consider August and September the time for potting Odontos, and that is quite right for those that flower during April, May, and June, but in a collection of Odontoglossums one can generally find some of the plants in flower during most months of the year. When that is so how can all the plants be ready for potting about one time? I do not mean to say that those not ready to pot in the early autumn potting season are ready now, for I find that there are not many weeks in the year when some plants are not in the right condition, and thus enable potting to be done if it is required. When the new growths are about three inches high is the time to pot an Odonto, irrespective of season.

In many collections now there are home-raised hybrids, and those that have wintered in small pots will be helped considerably if they are carefully shaken out and given fresh material, even if they have to go back into the same sized pot. Those that have made good progress and are growing freely will be helped by giving them a shift into a larger pot. It is of great importance that seedlings should be as far as possible kept on the move; my experience teaches me that a seedling does not stay long in one condition; it is either improving or going back. The same mixture will be found very suitable, only it works better for seedlings when it has been

passed through a ¾ inch sieve. For all Odontoglossums, except seedlings in pots under 2½ inches, I like to leave enough room for a surfacing of chopped sphagnum.

The Odontoglossum house will now be gay for some time. Many plants suffer considerably during the flowering season by allowing the spikes to remain on the plants too long. It is all very well to allow a large-bulbed and thoroughly rooted plant to carry its spike for a long season, and I have done it freely without any apparent harm accruing, but when the pseudo-bulbs show signs of distress before the flowers begin to expand, the spike should, for the plant's sake, be cut off as soon as it is partially open.

ODONTOGLOSSUM BICTONIENSE.—This pretty species is best suited when grown in a house a shade warmer than the Odontogloasum house. The growths will now be sufficiently advanced to enable any necessary work being done. When the growths have well extended, water may be given freely till they are complete, but at other seasons allow them to become well dry previous to watering.

O. UROSKINNERI.—This quickly overgrows the sides of the pot, but fine plants can soon be made by cutting off the leading bulb when the young growth is emitting new roots, working out as many as possible of the roots attached to the leading bulb. Place these pieces in a very shady position where they can be kept well sprayed over, when the check will be scarcely perceptible, and the old plant will soon make new leads if it is not disturbed. In potting this species do not firm the compost anything like so much as is desirable for such forms as O. crispum and its allies, as the thick fleshy roots are better able to work in a somewhat light material.

PHAIUS.—Thanks to the efforts of the hybridists, we now have some most beautiful varieties, which under fair conditions are of easy culture, giving splendid spikes of good flowers freely. In most of the species we had excessive foliage, necessitating considerable room, and the spikes on well-grown plants were often five feet in height, but now the length of leaf and spike has been reduced by hybridising that beautiful yet difficult species, P. simulans, with the tall growing forms. The outcome is a most beautiful set of decorative Orchids, both good for exhibition and for beautifying the houses, and they also make fine materials for cutting for room decoration. Among the best are P. × Cooksoni, P. × Norman, and P. × amabilis, which have the direct influence of P. simulans, then many of the P. Humblotii hybrids are most desirable, such as P. × Cooksoniæ and P. × Phœbe, and these, together with the secondary hybrids, make one of the greatest successes that has attended the efforts of the hybridist. On the one hand we had two difficult species, while the other parents, although very beautiful, were coarse in growth and took up too much room. But Mr. Cookson has altered all this, and has good reason to reflect on his

work with pleasure, while Orchid lovers should, and I feel sure they do, thoroughly appreciate such excellent work.

The compost used by us is made up of two parts good turfy loam to one part each of peat and leaf soil, mixed with a good deal of small crocks. In potting make the compost very firm, and work in right through it lumps of soft red brick, about the size of walnuts, which is helpful in keeping the soil porous, as during the season of growth they require copious supplies of water. A fair drainage is necessary, but do not give more than one-third the depth of pot, and allow room to surface with sphagnum. The best time to pot is when the young growths are about three inches high, and in potting shake out all the old material, as being strong feeders they soon exhaust the compost. I have found that if we have ever left any plants for two seasons without potting, the foliage loses its healthy green colour, and the strength of the spikes and the size and substance of the flowers are considerably reduced. I know that many people would say a few waterings with weak cow manure water would overcome this: it might, but I prefer growing all Orchids without the aid of any manure, as I would give them what they need in repotting each year.

Most of these are of easy propagation; in fact with us they are constantly breaking back without any cutting, and in potting it is well to remove back breaks, and pot up separately, when they soon make flowering-sized plants. For some time after they have been disturbed, water only as they become fairly dry; damping freely between the pots and spraying overhead on favourable days will considerably assist them in making a good start.

It is all important that the house in which they are grown should be a buoyant one, such as the Cattleya house, as a stagnant atmosphere is most detrimental to them, and soon causes disfigured foliage. The species, P. Blumei, P. Wallichii, and P. grandifolius may be treated in a similar manner, except that I never found the need to introduce the pieces of brick into the compost, and they can be grown in a closer and denser atmosphere without any harm accruing. Both hybrids and species require well shading from all strong sunshine.

The extraordinary hybrid Phaiocymbidium chardwarense we find grows very well when treated in all respects like the Phaius hybrids, likewise the Phaio-calanthe hybrids, with the two exceptions that during the period after the completion of growth till the new growth again starts away water should only be given when they become well dry, and that when the flower spikes appear I have also found it necessary to give them rather warmer quarters, that is if the Cattleya house is maintained at a minimum of 58° during December and January.

LÆLIA PUMILA, PRÆSTANS, AND DAYANA.—These are very beautiful

when successfully grown, giving a fine show of flowers in the autumn. Any plants that were not potted when new roots were emitted on the last-made pseudobulb may very well be potted now, if they require it, just as the new growths are coming away. For some time we gave these species somewhat shallow pans to grow in, but since we have used ordinary pots, provided with three holes by which they can be suspended, we have found they make much stronger growth. A good drainage is essential, and filling the pots nearly half full with rhizomes will not be excessive. A very suitable compost consists of three parts very fibrous peat and two parts chopped sphagnum, mixed with some sand and small crocks. To maintain vigorous growth it is very important that they are not retarded by having many old back bulbs. Cut these away freely, and judge the size of your plants by the number of leads, not by the number of bulbs. That is a point I consider all Orchidists should constantly observe. Pot moderately firmly, allowing room for a surfacing of sphagnum, with the exception of plants that may require potting on, and they should go for at least two seasons with just a little attention to the surface material. A position should be afforded them in the Intermediate house, choosing the coolest end, and they are best suited suspended, where they can have the benefit of a fair amount of strong light. Water should be sparingly applied for some time, but overhead spraying when the conditions are favourable is very helpful.

LÆLIA MONOPHYLLA.—This little gem is now well started into growth, and any repotting should be done at once, using the same mixture as given to L. pumila. With us it grows very well suspended in the house in which Cypripedium insigne is grown, which may well be called "Cool intermediate." During active growth it requires a fair amount of water, but at no season should it be allowed to become very dry.

In the Cattleya house, plants of C. bicolor, C. granulosa, C. velutina and others of the long-bulbed section will be starting into growth, thus enabling any potting or surfacing being done forthwith. Use a compost of good fibrous peat two parts, chopped sphagnum two parts, and leaf soil one part, with some sand and small crocks. Give a fair drainage of crocks and rhizomes; and pot firmly, keeping the base of the new growth on a level with the rim of pot. This section is often seriously retarded by having so many old back bulbs to support, so cut them away. Secure the bulbs to neat stakes, so that there is no shake when the plant is moved. They can be best treated when grouped together, and they prefer more direct sunshine than most of the other sections of Cattleya. Water carefully till the growths are well away and the roots have made a good start, and taken hold of the compost, and then they will take copious supplies till the full development of the new bulb is completed.

CŒLOGYNES.—Plants of the cristata section will be ready for potting

this month, if they need it. I do not advise potting these oftener than is absolutely necessary. A suitable mixture is made up of two parts peat to one part each of good fibrous loam and chopped sphagnum, with some sand and small crocks. Pans are the best receptacles, and a good drainage of crocks and rhizomes should be given. When doing well these soon become very crowded, making it advisable from time to time to pull them carefully apart, taking off some of the back portions. In re-making the plant keep the rhizome of the plant only a trifle higher than the rim of the pan, and allow enough room for future development. A specimen will then go for several years with just an annual re-surfacing, and the cutting out of a few back bulbs to prevent the plant again becoming unduly crowded, and by this means the centre will be as floriferous as the outer parts. Very pleasing objects can be made by growing them in 6 and 7 inch pans, suspending them in such a house as a fernery, where a minimum winter temperature of about 50° is maintained. After being disturbed water must be carefully applied till the growths and roots have made a fresh start, and remembering that the cooler they are grown the dryer they require keeping.

Trichopilias.—T. fragrans and the fine T. fragrans nobilius will be starting in the Cool intermediate house, and the necessary potting may be done, using a compost of equal parts of peat and sphagnum, with some sand and small crocks. Ordinary pots should be used, giving a drainage of crocks and rhizomes. During growth give water freely, and at no time should they be deprived of water long enough to cause any shrivelling. From now till the autumn overhead spraying and protection from all strong light will be helpful. T. coccinea and its varieties will soon be coming into flower, and they also will now require a fair amount of water.

Vandas and Aërides will now require more water directly, and the general surroundings should be kept in a humid state. Spikes will now be apparent on some varieties, such as V. suavis and V. tricolor, yet if it is necessary to renovate the surface material or even to renew the compost down to the crocks no harm will be done in carrying this out. Work out all the old soured material carefully. Many growers only use moss, but I prefer working in some good fibrous peat with it, though the actual surface may to advantage be all moss, the aërial roots should be guided to the pot, and not allowed more than possible to go to any angle. Plants that have a considerable amount of bare stem and no roots should have moss tied round the stems, to try and induce roots, so that at some future time the basal part may be cut away, by which lowering the leaves are brought down close to the base. The most shady position should be chosen, with Cattleya house temperature. If it is possible to place them where they have walls at the back and sides so much the better.

Vanda Denisoniana is better suited when grown suspended, and given

a position in the hottest and most humid part of the stove. Most of the Aërides may be treated in the same way, a position in the coolest part of the stove being given.

VANDA CŒRULEA will likewise require more water now. The house in which this charming species should be grown must of necessity be one well supplied with fresh air. My best success was when I grew it in a fernery the whole year round; when growing it was suspended over a tank, and after flowering it was placed in the dryest part of the house.

VANDA TERES should now be syringed freely. If the plants are being grown in the position they require, in a hot house, practically exposed to all sunshine, the flower spikes on many will be developing. After the flowers have expanded it is well to remove them to a house still hot, yet where they can be afforded shade till the flowering period is over.

OBITUARY.

SIR FREDERICK WIGAN, BART.—It is with great regret that we have to announce the death of Sir Frederick Wigan, Bart., of Clare Lawn, East Sheen, which took place suddenly on March 2nd. The deceased, who was in his eighty-second year, and had been in his usual health, was taken ill after recording his vote for the London County Council, and though medical aid was immediately summoned he never rallied. The deceased was an enthusiastic Orchidist, and the collection at Clare Lawn, which has been under the charge of Mr. W. H. Young (formerly of Kew), for the last seven years, was one of the best known in the London district, having been regularly represented at the big shows of the Royal Horticultural Society, and at many of the fortnightly meetings. It has also been mentioned in these pages on several occasions, and in some detail at pp. 78-80 of our first volume. The Phalænopsis collection has long been famous, and it has often been remarked that there must be something in the conditions of the house to induce such vigour and floriferousness. Full details were given in the article above cited. The genera Bollea, Pescatorea and Warscewiczella also succeed well in this house. The collection contains a large number of choice things, and one which we believe is at present not represented elsewhere is the fine Cymbidium × I'Ansoni, figured at page 209 of our eighth volume. Among the rarities may be mentioned Bulbophyllum virescens, and the pretty little Eria extinctoria (*Bot. Mag.* t. 5910). Among the plants which will serve to perpetuate Sir Frederick's name may be mentioned the handsome Odontoglossum × Wiganianum, Lælio-cattleya Wiganiana, and Cymbidium × Wiganianum. The deceased has long been a supporter of the Royal Horticultural Society, and was a Vice-President at the time of his death. The baronetcy will devolve upon the eldest son, Mr. F. W. Wigan.

BRASSOCATTLEYA HYEÆ.

The annexed figure represents a very beautiful hybrid between Cattleya Harrisoniana ♀ and Brassavola Digbyana ♂, from the collection of Major G. L. Holford, Westonbirt, Tetbury, which received an Award of Merit from the R.H.S. at the last Holland House Show, under the name of Brassocattleya Madame Hye. It is very distinct from the earlier hybrids between Brassavola Digbyana and the Cattleyas of the labiata group, this being the first in which a diphyllous Cattleya had been used as a parent.

Fig. 12.—Brassocattleya Hyeæ.

The result is a considerable difference in habit, while the three-lobed lip of that group also comes out strongly in the hybrid. In fact the flower strongly resembles that of the seed parent, both in shape and colour, but is larger, having an expanse of 5½ inches across the petals, while all the lobes of the lip are somewhat fringed. The colour of the flower is rosy lilac, with the disc of the lip light yellow. The front lobe of the lip is an inch-and-a-half broad, and somewhat reflexed. It is a very distinct and handsome hybrid. Our figure is reproduced from a photograph by Mr. F. W. Rolfe. Two

other hybrids of the same group have since flowered, both at Westonbirt, namely B.-c. Digbyano-Forbesii (*O.R.* xiv. p. 350) and B.-c. Pluto (xv. p. 39), in the latter case C. granulosa being the seed parent.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Westminster, on March 5th, when there was a fine display of Orchids, though there was considerable difficulty in staging them, owing to the Exhibition of South African Products being held at the same time. The consequence was that the groups were much scattered, while the Committee exhibits were ultimately discovered in a room upstairs, which was also partly devoted to other purposes. The awards consisted of one Gold and four other Medals, four First-class Certificates, six Awards of Merit and two Cultural Commendations.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), staged a magnificent group, on the further side of the Hall, opposite to the entrance, to which the Society's Gold Medal was awarded. It consisted largely of Dendrobiums, with a fine lot of Calanthe Regnieri in the centre, and examples of Epidendrum × Boundii at each end. There were also good selections of Cattleya Trianæ, Cypripediums, Odontoglossums, a fine Cymbidium grandiflorum, Cœlogyne × Colmanii (figured at page 73 of our last issue), and other good things. The Dendrobiums were far too numerous to particularise, but included fifteen named varieties of D. nobile, a fine series of D. × Ainsworthii and D. × Rubens varieties, a well-grown D. signatum with some of its hybrids, the whole being finely grown and very effectively arranged. There were also some Spathoglottis hybrids, to one of which, namely S. × Colmanii aureum, an Award of Merit was given. It had deep yellow flowers with a small ruby-coloured spot on the crest.

Canon the Hon. R. F. Gibbs, Aldenham Vicarage, Watford (gr. Mr. Lazzall), was awarded a Silver Flora Medal for six beautiful specimens of Cœlogyne cristata, crowded with flowers, a Cultural Commendation being also awarded to Mr. Lazzell.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr Alexander), sent a fine example of Cœlogyne insigne with two spikes, the best having fourteen flowers, Dendrobium × melanodiscus var. Radiance, a fine example of the yellow D. × Ophir, and a beautiful specimen of Sophrolælia Psyche, with eighteen of its brilliant flowers, to which a Cultural Commendation was given. Awards of Merit were given to Cypripedium × vil-exul, a beautiful yellow flower, to Odontoglossum × mirum Lady Howick (× Wilckeanum × crispum Calypso), a handsome thing heavily blotched with chocolate-purple on a white ground, and to

Brassocattleya × H. G. Alexander (Cattleya citrina × Brassavola Digbyana), a remarkable hybrid which is described on another page.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), received a First-class Certificate for Cattleya Trianæ var. The Premier, a very large and perfectly shaped flower, having very broad undulate petals, delicately tinged with rose pink, and the broad lip crimson-purple in front of the orange disc.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), received a First-class Certificate for Cymbidium insigne Glebelands var., an exceptionally fine form, with silver white flowers, lightly shaded with blush, and spotted with rose purple on the lip and base of the petals. He also sent the Annamese C. Schrœderianum.

F. Ducane Godman, Esq., South Lodge, Horsham, received a First-class Certificate for Lycaste × Balliæ South Lodge var., a large and richly-coloured form, having rose-red sepals and petals and a ruby-crimson lip.

J. S. Moss, Esq., Wintershill, Bishops Waltham (gr. Mr. Kench), also received a First-class Certificate for Odontoglossum crispum Mossiæ, a very handsome variety, having broad, toothed segments, lightly suffused with rose, and evenly blotched with reddish purple.

Francis Wellesley, Esq. Westfield, Woking (gr. Mr. Hopkins), received Awards of Merit for Cypripedium × Dicksonianum (villosum aureum × Euryades), a handsome thing, having the dorsal sepal rosy crimson, rather darker at the base, with a broad white band at the apex, and the petals and lip light buff yellow tinged with red-brown, and C. × Mrs. Francis Wellesley (Sanderianum × Gowerianum), in which the characters of the two parents are very well combined. He also sent C. × Mons. de Curte, Westfield var., a handsomely blotched form.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent two splendid spikes of Cymbidium grandiflorum, Glasnevin var.

Gurney Wilson, Esq., Glenthorne, Hayward's Heath, sent Odontoglossum crispum rotundum, a handsomely blotched form, in which the only expanded flower was very round, owing to the great breadth of the sepals and petals. It should be a fine thing when fully developed.

Messrs. Charlesworth and Co., Heaton, Bradford, received a Silver Banksian Medal for a select group, containing a fine Odontoglossum × Ossultoni, a garden-raised form of O. × Adrianæ with a branched spike and darkly-spotted flowers, O. × Elaine var. Golden Gem, having a lemon-yellow flower regularly spotted with chocolate purple, some good white O crispum, with a finely spotted form, Lælio-cattleya Sheila (Cattleya Percivaliana alba × Lælia præstans alba), a beautiful white flower with an orange disc to the lip, and others.

Messrs. James Cypher and Sons, Cheltenham, received a Silver Banksian Medal for a good group, consisting largely of splendidly-grown Dendrobiums, and others, with the handsome Odontoglossum × loochristiense var. Empress Frederick in the centre. It had broad bright yellow segments heavily blotched with red-brown.

Messrs. Hugh Low and Co., Enfield, also received a Silver Banksian Medal for a good group of Orchids, including several fine forms of Cattleya Trianæ and C. Percivaliana, one of the latter, called C. P. Little Gem, having the flower nearly white with a yellow disc.

Messrs. Armstrong and Brown, Tunbridge Wells, also staged a good group, including Cymbidium × Woodhamsianum (Lowianum × eburneo-Lowianum), most like the former parent, but the flowers larger and more yellow, a home-raised example of Dendrobium nobile virginale, a nearly white form of D. superbum, Cypripedium × Maudiæ, with three flowers, C. × Harrisianum virescens, C. × aureum Hyeanum, C. × Fascinator, and others.

At the meeting held on March 19th, the Hall had reverted to its normal condition, and there was a very fine display of Orchids. The awards consisted of five Medals, three Awards of Merit, and one Cultural Commendation.

H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. Day), received an Award of Merit for Odontoglossum crispum var. Lily Bourdas, a handsomely blotched form, the blotches being claret red and arranged in a large cluster about the middle, and the ground colour slightly suffused with purple.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received an Award of Merit for Odontoglossum crispum Rosemary, a remarkably fine white form, slightly tinged with rose. The spike bore nine flowers. He also sent Lælio-cattleya Olivia (L. Jongheana × C. Schrœderæ), a beautiful hybrid most approaching the latter in size and colour. The plant which received an Award of Merit at the last meeting under the name of Odontoglossum × mirum Lady Howick had its name changed to O. × Lady Howick, because of a doubt of its parentage.

Mr. Warrington, grower to Miss M. E. Rushton, Monks Manor, Lincoln, received a Cultural Commendation for a magnificent plant of Cypripedium Rothschildianum, bearing eight spikes with an aggregate of twenty-seven flowers.

Jeremiah Colman, Esq., Gatton Park, Reigate, sent the large and handsome Dendrobium × Othello var. Colossus.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed three plants of the handsome Odontoglossum triumphans Lionel Crawshay.

F. S. Gledstanes, Esq., Berry Hill, Taplow (gr. Mr. Milsom), sent

fine heavily-flowered cut stems of Dendrobium nobile and D. Wardianum.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent Lælio-cattleya Adelina (L. cinnabarina × C. Percivaliana), L.-c. Amelia, and Cypripedium × Paulinæ.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), showed two plants of Cymbidium × Wiganianum, a good specimen of Platyclinis glumacea, and some good Cypripedes.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), exhibited Cypripedium × Mrs. Fred Hardy and C. × Chas. Lucas (Beekmanni × Swinburnei).

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Lælio-cattleya Mrs. R. A. H. Mitchell (C. Warscewiczii × L.-c. Martinetii), a fine rose-purple hybrid, having the lip veined with claret-colour, shading to rose at the margin.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a remarkably fine exhibit, to which a Silver-gilt Flora Medal was awarded. Several of the principal things were grouped, there being a fine batch of Odontoglossum crispum, one of the beautiful O. × Rolfeæ, showing much variation, and another of various hybrid Odontoglossums, including O. × Lawrenceanum, O. × Othello, O. × Ossultoni, O. × Phœbe, O. × ardentissimum, &c., with some good Cattleya × Enid, C. × Empress Frederick, and several of the brilliant Sophrolælia Psyche, with a number of Lælio-cattleya Myra and others in the centre. Various other species and hybrids were also included.

Messrs. Amstrong & Brown, Tunbridge Wells, received a Silver Flora Medal for a fine group of well-flowered Dendrobiums, Cypripediums, and others, including a particularly fine Zygopetalum × Gottianum.

Messrs. James Cypher & Sons, Cheltenham, were awarded a Silver Flora Medal for a fine group, including some fine Dendrobiums, Lycaste Skinneri and its variety alba, Odontoglossum crispum and O. Pescatorei, Cattleya Trianæ and C. Schrœderæ in excellent condition, a fine C. × calummata, Cypripedium × Beekmanni, C. × tixallense, and other good things.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a showy group, containing numerous fine forms of Cattleya Trianæ, including the varieties Backhouseana, plumosa, differing from the preceding in its darker crimson-purple lip, and E. Cooper, a lavendar-tinted form, with the front of the lip of a peculiar shade of violet. Lælio-cattleya bletchleyensis and other hybrids were also in fine condition.

Messrs. James Veitch & Sons, Chelsea, also received a Silver Flora Medal for a fine group, consisting of well-flowered examples of Dendrobium crassinode, Wardianum and nobile, Odontoglossum crispum, a selection of

Cypripedium × Countess of Carnarvon and other good things, with examples of Oncidium concolor in front.

Mr. James Douglas, Edenside, Great Bookham, received an Award of Merit for Cymbidium × Colmaniæ, Edenside var. (eburnum × eburneo-Lowianum), a beautiful ivory-white hybrid, without a red area in front.

M. Florent Claes, Etterbeek, Brussels, sent Cattleya Trianæ Queen Wilhelmina, Odontoglossum crispum Rita Claes, approaching the variety Lady Jane, and O. c. Fr. Claes, a very handsomely blotched form, with white ground colour, tinged with rose, and the large blotches claret-coloured.

Messrs. Hugh Low & Co. Enfield, staged a good group of Cypripediums, Dendrobiums, Cattleyas, and other Orchids.

M. Mertens, Mont. St. Amand, Ghent, showed a number of good hybrid Odontoglossums.

M. H. A. Tracy, Twickenham, showed Odontoglossum × loochristiense Edith Winn, a very fine yellow flower, heavily blotched with chestnut-brown.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on February 7th, when there was a fine display of Orchids, including six groups to which Medals were given. The members of the Committee present were :—E. Ashworth, Esq., Chairman, and Messrs. Ashton, R. Ashworth, Cypher, Keeling, Parker, Rogers, Sander, H. H. Smith, P. Smith, Thompson, Thorp, Upjohn, Warburton, Ward, and P. Weathers (hon. sec.)

W. Thompson, Esq., Stone (gr. Mr. Stevens), received a Silver Medal for a choice group, and Awards of Merit for Cypripedium × Lathamianum var. Thompsoni and C. × Rupert.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), also received a Silver Medal for a good group.

Dr. Hodgkinson, The Grange, Wilmslow, received an Award of Merit for Cypripedium × Diadem var. Grand Model.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), received a Cultural Certificate for a collection of well-grown Lycastes.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), received a Vote of Thanks for a small group.

Messrs. Armstrong and Brown, Tunbridge Wells, received a Silver Medal for a very fine group of Cypripediums, and Awards of Merit for C. × nitens, Queen of the Yellows, C. × Titian, C. × Dowleri var. Virginius, Orchidhurst var., and C. × Juno, Drewett's var.

Messrs. James Cypher and Sons, Cheltenham, received a Silver Bank-

sian Medal for a good group, and an Award of Merit for C. × Dowleri var. punctatum.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, and Messrs. Shackleton, Bradford, received Bronze Medals for interesting groups.

Messrs. Charlesworth and Co., Heaton, Bradford, received an Award of Merit for Cattleya × Enid superba, and a Vote of Thanks for a small group.

Messrs. Keeling and Sons, Bradford, and Mr. J. E. Sadler were also accorded Votes of Thanks for small groups.

At the meeting held on February 21st, there was also a fine display, and the awards consisted of five Medals, one First-class Certificate, and seven Awards of Merit.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), received a Silver Medal for a good group, and a First-class Certificate for Odontoglossum × Lambeauianum, Warburton's var.

H. J. Bromilow, Esq., Rainhill, also received a Silver Medal for a good group.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), received Awards of Merit for Cypripedium × Picus and Odontoglossum × Lambeauianum, Ashworth's var.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), received Awards of Merit for Cypripedium × Archimedes, Prince Eddie, and Odontoglossum crispum, Samuel Gratrix.

G. W. Jessop, Esq., Rawdon, Leeds, received an Award of Merit for Dendrobium × Wiganiæ var. Snowflake.

Messrs. James Cypher and Sons, Cheltenham, received a Silver Medal for a fine group.

Messrs. Keeling and Sons, Bradford, and Mr. J. E. Sadler received Bronze Medals for small groups.

Mr. John Robson, Altrincham, received an Award of Merit for Lycaste Skinneri, King of Spain.

Messrs. Stanley and Co., Southgate, received an Award of Merit for Cattleya Trianæ var. Edgar Knight.

At the meeting held on March 7th, the hall was gay with exhibits, and the awards consisted of Five Medals, three First-class Certificates, and fifteen Awards of Merit. The members of the Committee present were: E. Ashworth, Esq., Chairman, and Messrs. R. Ashworth, Cypher, Keeling, Leemann, Parker, Sander, Shill, P. Smith, Thorpe, Walmsley, Warburton, Ward, Williamson, and P. Weathers (hon. sec.).

Z. A. Ward, Esq., Northenden, received a Silver-gilt Medal for a very

fine group of Odontoglossums, First-class Certificates for O. × Wardii, O. polyxanthum, and O. Harryanum, and Awards of Merit for O. × Phœbe, Ward's var., O. × Elaine, and O. × Rolfeæ, Ward's var.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), received a Silver Medal for a fine group, and Awards of Merit for Odontoglossum × loochristiense, Empress Frederick, O. × Lambeauianum, Vine House var., O. × Cooksonianum, and Cattleya Trianæ, The Don.

W. Thompson, Esq., Stone (gr. Mr. Stevens), received a Silver Medal for a fine group, and an Award of Merit for Odontoglossum × Crawshavanum superbum.

John S. Moss, Esq., Wintershill, Bishops Waltham (gr. Mr. Kench), received a First-class Certificate for Odontoglossum crispum Mossiæ.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), received Awards of Merit for Odontoglossum × amabile, King Edward VII., O. × waltonense, Ashland's var., O. crispum var. Dido, O. × Adrianæ, Ashworth's var., and Cypripedium × Madeline.

G. W. Jessop, Esq., Rawdon, Leeds, received a Botanical Certificate for Sarcochilus Fitzgeraldi.

Messrs. James Cypher and Sons, Cheltenham, received a Silver Medal for a fine group, and a First-class Certificate for Lælio-cattleya Dominiana magnifica.

Messrs. Sander and Sons, St. Albans, received a Silver Medal for a fine group, and Awards of Merit for Vanda Watsoni and Cypripedium × Hunteri.

DENDROBIUM NOBILE VIRGINALE.—It is interesting to record that the beautiful Dendrobium nobile virginale has again been raised true from seed. Messrs. Armstrong and Brown, Orchidhurst, Tunbridge Wells, exhibited a well-flowered example at the R.H.S. meeting held on March 5th, and in sending four of the flowers remark that it is from a batch obtained by self-fertilising this variety, and that the seedlings have come perfectly true from seed. This was precisely the case with the batch raised in the collection of R. G. Thwaites, Esq., of Streatham, as already recorded (*O.R.* xii. p. 103; xiii. p. 133), and there are several other albinos which have come perfectly true from seed.

This beautiful albino is sometimes known as D. nobile album, but it is not the original plant of that name, which appeared and was recorded as long ago as 1889 (see *Will. Orch. Gr. Man.* ed. 7, p. 352), and had pure white sepals and petals, but the usual maroon-purple disc to the lip. D. nobile virginale appeared for the first time in 1897, and was described and figured at page 145 of our fifth volume. The name D. n. album should not be used for this form.

CYNORCHIS LOWIANA.

Cynorchis Lowiana is a very graceful Orchid which was introduced by Messrs. Hugh Low and Co., from Madagascar, and was described by Reichenbach in 1888 (*Gard. Chron.* 1888, i. p. 424). At that time the true C. purpurascens, Thouars, was not in cultivation, and, indeed, was very imperfectly known, and when soon afterwards the present species flowered at Glasnevin it was taken to be a form of C. purpurascens, and was figured as such in the *Botanical Magazine* (t. 7551). In 1900, however, M. Warpur

Fig. 13. Cynorchis Lowiana.

introduced another species, which was identified as C. purpurascens, Thouars, when the mistake was pointed out (*O.R.* ix. p. 20), and a coloured plate was given (*Bot. Mag.* t. 7852). It has also been figured in these pages (xiv. p. 305). C. Lowiana appears to be only known from the plants of the original introduction, but, fortunately, they are easily grown, and flower annually at Kew and elsewhere. The present figure represents a good pan of the species which flowered at Kew last year, and is reproduced from a photograph taken by Mr. F. W. Rolfe. It is, of course, considerably

reduced in size, the lip and the clavate spur each measuring about an inch in length. The flower is light purple, with the exception of the lateral sepals and the spur, which are pale green, and there is a pair of linear red blotches situated on the disc of the lip. The genus is nearly allied to Habenaria.

A hybrid has been raised from the two species above mentioned, namely, C. × kewense (*O.R.* xi. p. 219). It is a free flowering plant, fairly intermediate in character, and as easily grown as its two parents. C. Lowiana was the pollen parent. One species has the reputation of being a weed in the Clare Lawn collection (*O.R.* xiv. p. 300), and this is now known to be C. fastigiata, Thouars.

EPIDENDRUM × KEWENSE: A MENDELIAN EXPERIMENT.

THE interesting article, under the above title at page 58, from the pen of Mr. R. A. Rolfe, suggests the following notes.

So far, I have found that direct experiments with Orchids on Mendelian lines have been difficult to carry out, owing partly to the time required to raise several generations and partly to cultural difficulties. Mr. Rolfe's experiments at Kew with Epidendrum × kewense are therefore most welcome, and he is to be heartily congratulated on his discovery of such a comparatively easy subject for Mendelian experiments in Orchids. Mr. Rolfe has very kindly sent me a batch of his second generation hybrids (known to Mendelians as the F_2 generation): these are now growing well, and may possibly flower next year.

With regard to the result, which we shall all await with much interest, Mr. Rolfe states that it has already been predicted from the Mendelian standpoint, viz.: One quarter of the seedlings should have purple flowers, like E. evectum, one quarter yellow flowers, like E. xanthinum, and one-half should be salmon-coloured, like E. × kewense.

With reference to this prediction, I would like to point out that such a simple result can only be expected if the purple and yellow characters are a pair of characters which Mendelize (what Mendelians term "allelomorphic"). This may be so, but it seems to me rather unlikely in view of the results we have obtained in our experiments with purple and yellow flowers of other kinds of plants.

The fact that the F_1 hybrid, E. × kewense, is salmon-coloured, and the salmon-colour is "due to an irregular marbling of light reddish purple over a yellow ground" (R.A.R. in *O.R.* xi. p. 6), suggests that the purple and yellow characters of the parents are not a Mendelian pair, but rather belong to two distinct Mendelian pairs, which may well be (1) presence and absence of purple, and (2) presence and absence of yellow, presence being dominant over absence in each pair. In such a case the salmon-coloured

F_1 hybrid, E. × kewense, might arise through the dominant presence of both the purple and the yellow characters, but as there is not room for both to develop fully, the result is a mosaic of the two, which appears as a blend.

If this interpretation is correct, the F_2 hybrids, raised from E. × kewense selfed, should come out as follows: On the average, out of sixteen plants raised, nine should be salmon-coloured, like E. × kewense, three purple, like E. evectum, three yellow, like E. xanthinum, *and one white*—the white form representing the absence of both purple and yellow.

It is of course possible that more than two pairs of unit characters are concerned in this cross, *e.g.*, the colour of the crest may be a distinct unit, as it is in other plants. If three pairs of characters are concerned the result would be eight distinct forms in F_2, in the ratio of 27 : 9 : 9 : 9 : 3 : 3 : 3 : 1.

Experiment alone can determine the unit-characters concerned in these hybrids, and the results of Mr. Rolfe's experiments with E. × kewense will be awaited with much interest by Mendelians, as well as by Orchidists generally.

C. C. HURST.

DIURIS LONGIFOLIA.

THIS is a very interesting and pretty terrestrial Orchid which has just flowered in the collection of J. Wilson Potter, Esq., of East Croydon, who received it from Western Australia. The species of Diuris are rare in cultivation, and I do not know of another at the present time, though three are recorded in *Nicholson's Dictionary of Gardening*, and two of these have been figured in the *Botanical Magazine*, D. maculata, Sm. (t. 3156), and D. alba, R. Br. (t. 6201). Both of them flowered at Kew. I do not find a record of D. longifolia having previously appeared in cultivation. It was originally described by R. Brown in 1810 (*Prodr. Fl. Nov. Holl.* p. 316), from a dried specimen collected by Menzies, and appears to be rather widely diffused, being recorded from various localities in Victoria, Tasmania, South and West Australia. The Western plant was named by Lindley Diuris corymbosa (*Swan Riv. Appx.* p. 51), but is now considered synonymous with D. longifolia. In fact the Tasmanian form has been figured as D. corymbosa (*Hook. f. Fl. Tasm.* ii. p. 7, t. 105, fig. B.). It is quite unlike any other Orchid in cultivation, but may be briefly described as a terrestrial plant, a foot or more high, with a few narrow radical leaves, and a scape of several moderate-sized yellow and purple flowers. The dorsal sepal is broadly ovate, and the lateral pair long and narrow (the generic name being being given in allusion to the two tails). The petals are spreading, and spathulate, while the lip is deeply three-lobed. The genus contains rather over a dozen species.

An interesting note appeared in the *Botanical Magazine* when D. alba

was figured. Sir Joseph Hooker remarked: "The beauty of the terrestrial Orchids in the Australian Colonies is proverbial. In spring and summer the meadows are in many places enamelled with them, and it is no unusual thing to find thirty or forty species in a comparatively limited area, comprised under the genera Diuris, Thelymitra, Prasophyllum, Glossodia and Pterostylis, and in such quantities that bouquets may be made of them in any number, and I feel assured that in no other part of the world may so many different Orchids be found in a given small area as in the Australian Colonies. Unfortunately, though easily procured and transported to Europe, they are cultivated there with great difficulty, flowering once only, if at all, and disappearing for ever after, a result probably due to our uncongenial seasons."

R. A. R.

ORCHIDS FOR AMATEURS.

(*Continued from p.* 88).

A FAVOURITE method with many amateurs of increasing their collections is to purchase imported plants and establish them, and this is particularly the case with Dendrobiums, Odontoglossums, Cattleyas, and some others. The deciduous species of the former, being imported when at rest, suffer little under the process, and flower profusely soon after being potted up. Imported Orchids, if obtained in good condition, and taken proper care of, soon establish themselves, and there is always the chance of obtaining some striking varieties. Now is a good time to obtain such plants, as they arrive when danger of frost is over, and are likely to start away quickly into growth, and establish themselves before the winter comes round, which is a matter of no little importance.

As soon as received the plants should be taken in hand. Do not lay them about under stages, as they have had knocking about enough already. The first thing is to go over them and remove any dead or decaying portions, and do any cleaning that may be necessary. They should not be potted up at once, but may be placed singly in small pots with a few crocks only, or placed on a layer of moist sphagnum moss, to plump up. They should be kept just moist, shaded from direct sunshine, and given a temperature rather below that which they will ultimately require. Do not suspend them the wrong way up, or deluge them with water, or put them in too much heat at first.

If a moist genial atmosphere is provided the plants will gradually plump up, and the young growths and roots soon begin to push. The appearance of young roots is a sign that the time to pot has come, as these will at once take possession of the new compost. The plants may not all start at once, indeed they seldom do, but they should be looked over at intervals, and those taken in hand that are in the proper condition, just as in the case

of established plants. It should be unnecessary to add that the greatest care should be taken not to injure the young growths or roots.

As to potting and compost, the instructions previously given will suffice, but whether pot or basket culture be adopted—and this will depend on the nature of the plant—it is important to start with a receptacle as small as possible, because an excess of compost beyond that which the roots can avail themselves of tends to become sour. The size of the plant, and the vigour with which it is pushing out, will afford the best guide as to this. In other respects, one may pot the same as for established plants, and in both cases it is important that the plant should be made firm, being tied up if necessary, because if it rocks about the roots must suffer. Avoid watering directly as much as possible, but keep the surroundings moist. A light spraying of the surface of the compost will suffice for a time, the amount being gradually increased as root action progresses.

The subsequent treatment will be the same as for imported plants. Should any of the plants fail to break within a reasonable time, though appearing otherwise healthy, the only thing is to continue the treatment and have patience, for it is no use attempting to force matters. Unless they have suffered too much during the journey growths and roots will ultimately appear, and some Orchids recover from the check of importing much more quickly than others. It is a severe check to many Orchids to be torn from their native surroundings, dried, perhaps unnaturally, stowed for weeks in semi-darkness, and transported for thousands of miles, through unsuitable climates, before getting comfortably settled in our Orchid houses, and the only way is to coax them back into health and vigour gradually. But this is fortunately possible in a large number of cases, and the pleasure of watching their gradual progress, and the ultimate unfolding of their blossoms, is one of the delights of Orchid growing. A.

THE HYBRIDIST.

Brassocattleya Alexanderi.—An interesting and beautiful hybrid raised in the collection of Major G. L. Holford, Westonbirt, Tetbury, from Cattleya citrina ♀ and Brassavola Digbyana ♂, which received an Award of Merit from the R.H.S. on March 5th last. The plant bears erect, somewhat compressed pseudobulbs, and dark green fleshy leaves, and is thus like the Brassavola in habit, but the flower is more like the Cattleya parent, being somewhat pendulous and on a rather long pedicel, while the segments are somewhat connivent, fleshy, and light yellow in colour. The lip is entire, but somewhat fringed at the margin, and primrose yellow in front, passing into greenish towards the base. It is a very distinct and remarkable hybrid, and Mr. Alexander must be congratulated on his success in uniting two such diverse species.

ORCHIDS AT CLARE LAWN, EAST SHEEN.

AMONG the numerous beautiful Orchids in flower at Clare Lawn the following may be briefly mentioned. About two dozen pans of Odontoglossum Rossii are flowering profusely, and with O. × Humeanum, O. nevadense, three good O. × Harryano-crispum, two O. × elegans with four spikes, with numerous examples of commoner species are making a very effective display. With them we noted two good Zygocolax Veitchii var. Kromeri, half-a-dozen Lælia Jongheana, and others, while the specimen of Cymbidium Devonianum was pushing up eight racemes.

In another house we noted a fine plant of Cymbidium insigne, one spike producing nineteen flowers, while C. × eburneo-Lowianum and Cypripedium hirsutissimum with four flowers were very effective.

In the Cattleya house we noted Oncidium Cavendishianum in flower, also good examples of Cattleya × porphyrophlebia, some good forms of C. Trianæ, Miltonia × Bleuana, and a fine specimen of Brassocattleya Lindleyana.

Zygopetalum × Roeblingianum was showing several spikes, while Z. × Sedeni and Z. crinitum, with Zygocolax Wiganianus and various Dendrobes and Cypripedes, made a nice display.

The pretty little Oncidium tetrapetalum in the Phalænopsis house attracted attention, and three spikes were pushing on Zygonisia Rolfeana, while three others had just been removed. Phaius × Norman and numerous other things were also in flower.

NOTES.

THREE meetings of the R.H.S. to be held at the Royal Horticultural Hall, Vincent-square, Westminster, are announced for April, the dates being the 2nd, 16th, and 30th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The subject of the afternoon lecture on the first of these dates is "Hybrid Orchids and their parents," by Mr. H. J. Chapman, and will be illustrated by lantern slides.

The dates of the April meetings of the Manchester and North of England Orchid Society are April 4th and 18th, while the following one is fixed for May 2nd. This completes the Society's year, and the annual general meeting will be held in the afternoon of the same date. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

In December, 1903, Herr G. Müller, of Rotterdam, wrote: "I have a plant of Cypripedium × memoria-Moensii which is flowering for the first

time, and showing two lower sepals instead of one. The two sepals are well-shaped, greenish, with a darker line in the centre." The peculiarity seems permanent, for the plant has flowered twice since, and on both occasions the three lateral sepals were repeated. It has been observed in other hybrids and in some of the species.

Orchid Exhibition at Mannheim.—Mr. Otto Beyrodt writes that an International Spring Orchid Show will be held from May 7th to 9th next, in connection with the Great Jubilee International Art and Horticultural Exhibition to be held at Mannheim from May 1st to October 20th. It is estimated that this Show will be as large and important as the one recently held at Dusseldorf, if not larger. A grand Hall will be at the disposal of exhibitors, and everything will be done to make the exhibition a great success. Several English amateurs have already promised to be members of the Jury, and it is hoped that British exhibitors will be well represented. A programme has been sent, showing fifty-three classes, in which the prizes range from 1,000 marks, for a collection of 100 and more Orchids in flower, in different varieties, down to 10 marks for a collection of at least five Orchids in flower, grown in a private room. This, by the way, is the second prize, the first being 25 marks. There are classes for the best 100, 50, and 25 Orchids, both for Nurserymen and Amateurs, for 75 and 30 hybrid Cattleyas and Lælias, for 25 different Cattleyas and Lælias, for 25 Cattleya Schrœderæ, for 25 C. Mendelii, for 40 hybrid Odontoglossums, for 50 and 25 O. crispum, including varieties and natural hybrids, for 10 Vandas, Aërides, and Saccolabiums, for 25 Dendrobiums, for 12 Miltonias, for 12 Masdevallias, for 25 Lycaste Skinneri, for 10 Disas, including hybrids, for 10 Phalænopsis, for 30 botanical Orchids, for a collection of Anœctochili, for 50 European Orchids in at least five varieties, also for specimen plants of Cattleya, Lælia, Cypripedium or Selenipedium, Cymbidium, Oncidium, Odontoglossum, Phalænopsis, Stanhopea, Vanda, Lycaste, and for one new hybrid in flower exhibited by the grower, the two prizes for this class being 150 and 75 marks. Other shows will be held later in the season. All communications and enquiries concerning the different Orchid shows should be addressed to M. Otto Beyrodt, Marienfelde, bei Berlin.

A beautiful flower of Cattleya Schrœderæ is sent from the collection of Dr. Reidemann, of Hamburg, by Mr. Bunce, who remarks that it is a good strong growing plant, generally producing scapes of three or four flowers. It is also delicately heliotrope-scented.

A very pretty seedling of Odontoglossum crispum is sent by T. Campbell, Esq., Newmilns, Ayrshire, N.B. It is said to have been raised from O. c.

Jeanette × O. c. roseum, and has longish, toothed segments, with light rose ground colour, and numerous red-brown blotches and dots, the latter being particularly numerous on the petals. It is proposed to call it O. c. Campbellii.

ORCHID PORTRAITS.

CATTLEYA × HARDYANA ROCHFORDIANA. —*Journ. Hort.* 1907, ii. p. 201, with fig.

CYCNOCHES CHLOROCHILON.—*Orchis*, i. p. 60, t. 8.

CYMBIDIUM × COLMANIÆ, EDENSIDE VAR.—*Gard. Mag.* 1907, p. 12, with fig.

CYPRIPEDIUM × SANDERIANO-SELLIGERUM.—*Journ. Hort.* 1907. i. p. 251, with fig.

DENDROBIUM NOBILE. - *Garden*, 1907, i. pp. 142, 143, with fig.

DENDROBIUM PHALÆNOPSIS VAR. SCHRŒDERIANUM.—*Orchis*, i. p. 67, t. 9.

ODONTOGLOSSUM CITROSMUM.—*Amer. Gard. Chron.* 1907, p. 169, with fig.

ODONTOGLOSSUM × CRISPO-HARRYANUM VAR. F. SANDER.—*Gard. Chron.* 1907, i. p. 142, fig. 61.

ODONTOGLOSSUM CRISPUM VAR. ROSEMARY.—*Gard. Mag.* 1907. i. pp. 198, 201, with fig.

ODONTOGLOSSUM INSLEAYI.—*Amer. Gard. Chron.* 1907, p. 171. with fig.

ODONTOGLOSSUM × LAMBEAUIANUM VAR. IDOL.—*Journ. Hort.* 1907, i. p. 273, with fig.

ODONTOGLOSSUM ROSSII MAJUS.—*Amer. Gard. Chron.* 1907, p. 170, with fig.

ODONTOGLOSSUM × WATTIANUM VAR. PRINCEPS.—*Gard. Chron.* 1907, i. p. 135, fig. 60.

PAPHIOPEDILUM VILLOSUM VAR. ANNAMENSE, Rolfe.—*Bot. Mag.* t. 8126.

PHAIUS × COOKSONI.—*Gard. Mag.* 1907, p. 134, with fig.

PLEIONE YUNNANENSIS, Rolfe.—*Gard. Chron.* 1907, i. p. 152, fig. 70.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used) Subjects of special interest will be dealt with in the body of the work*].

A.B.P.—The flower which turned up among Dendrobium nobile is D. nobile virginale, the albino of the species, which first appeared in 1897 (see *O.R.* v. p. 145, fig. 8). It has also been recorded under the name of D. n. album, but the original D. n. album, recorded as long ago as 1889, has the usual maroon blotch on the lip, as you point out.

W.H.Y.—**Diuris longifolia** **(see p. 123).**

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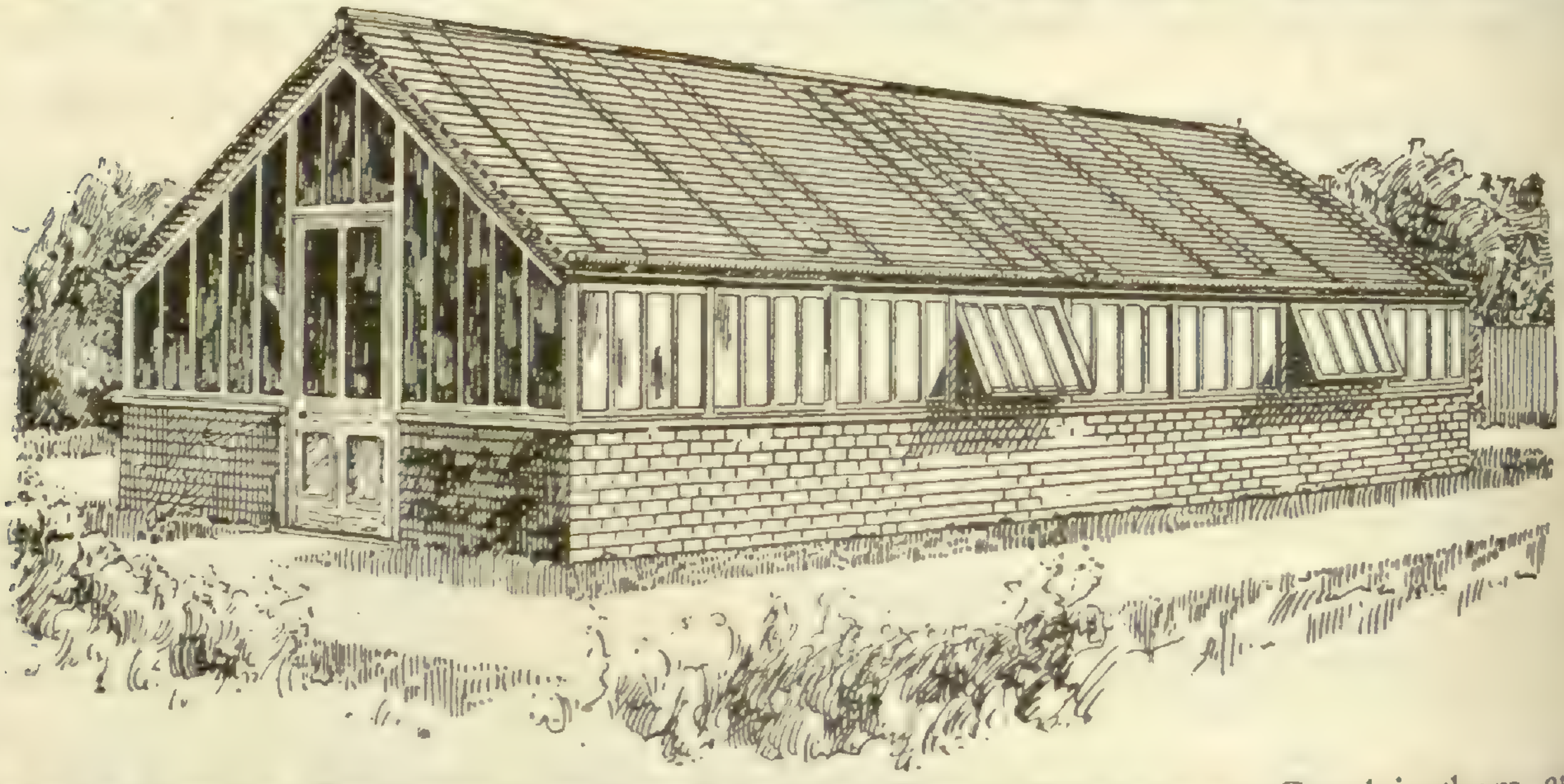

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" Wilckeanum Rothschildianum
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" Baron Schroder exquisitum
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" Beekmanni
" Boadicea splendidissima
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" " album x C insigne Sanderæ
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Cattleya Hardyana alba Peeters var.
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" labiata alba
" " Peetersi superba
" Mossiæ albo-cœlestis
" " Reinekiana excelsis
" " Faerie Queene
" " Wagneri
" " White Lady
" Percivaliana alba
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" " var. Mrs. H. G. Moon
" speciosissima Stanleyi Sander's var.
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Lælia elegans His Majesty
" tenebrosa mirabile
Lælio-Cattleya Canhamiana Marguerite
" Henry Greenwood, The King
" Ingrami splendidissima
Miltonia vexillaria Duchess of Sutherland
" " Chelsiensis
" " Hardy's var.
" " Leopoldi
" " Mrs. H. Balantine
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THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *MAY*, 1907. [No. 173.

THE HYBRIDISATION CONFERENCE REPORT.

THE Report of the last Hybridisation Conference, or, to give it its official title, Report of the Third International Conference (1906) on Genetics, edited by the Rev. W. Wilks, M.A., has just appeared, and will be warmly welcomed. It is pretty similar in bulk to an issue of the R.H.S. *Journal*, and contains 486 pages, with 131 figures, and an Index. A photograph of Gregor Johann Mendel, whose work has of late received such attention, forms the frontispiece. We may summarise the papers which will be of most interest to our readers.

The first twenty-eight pages are devoted to a reproduction of the original programme of the Conference, with a list of the invited guests, and includes even a reproduction of the tickets, arrangements for the several sessions, and other matters, which it is thought may have some historical interest, and will help to recall to many the details of an eventful and very enjoyable week. Then come the reports of the conversazione and exhibits, the dinner given by the Horticultural Club, the visit to Burford, the Society's banquet, and the visits to Gunnersbury and Kew, this being interspersed with numerous portraits.

The Report of the Conference proper is prefaced by a short account of Mendel and his work, with two portraits and a facsimile letter, which he wrote to Nägeli, and here we should have liked to see a summary of the following papers, which are difficult to find, for in the Index the subject of each address is not stated. This is probably accidental, but is rather an unfortunate omission.

Orchids are first definitely introduced in a paper on "Mendelian characters in Plants and Animals," by C. C. Hurst, F.L.S., F.R.H.S., a short note being given, accompanied by photographs of thirty forms of Paphiopedilum × Hera (see *O.R.* xi. pp. 71-73, fig. 16-18). Mr. Hurst alludes to three pairs of Mendelian characters, viz., purple sap colour and albino, spotted sap and striped sap patterns, and white and green areas, the first named of the pair being considered dominant over the other. Many other characters in Orchids, both pigmental and structural, he con-

siders to be obviously Mendelian, but he remarks that more evidence and much careful investigation are necessary before one can venture to deal confidently with such complicated material.

"A contribution to the study of Spontaneous Hybrids in the European Flora," by Mons. E. G. Camus, contains a paragraph reflecting European hybrid Orchids, but details are not given, as the catalogue was considered too long for inclusion in the Report. Some of these, however, both British and Continental, are included in a paper on "Natural Hybrids," by R. Irwin Lynch, M.A., V.M.H.

Prof. Pfitzer, of the University of Heidelberg, read a paper on "Hybridisation and the Systematic Arrangement of Orchids," in which he points out that marked differences in vegetative structure must be considered as impediments to hybridisation, the doubtful Phaiocymbidium being the only exception. He also considers that all the genera which have hitherto been successfully crossed are very nearly allied. A second paper, published at the end of the Report, "On the phylogeny of Orchids" has a melancholy interest, being found upon his writing-table after his death, and forwarded to the Society by his executors. It discusses some interesting questions relating to the systematic affinities of Orchids, and the development of the various tribes and smaller groups.

"Natural Hybrids of the Cattleya Group," by R. Allen Rolfe, A.L.S., is an analysis of the numerous hybrids of Cattleya and Lælia which have been found among importations of the parent species. First is given an historical summary, in which the appearance of the various forms is given, with remarks on their parentage. This shows that forty-four natural hybrids have been recognised, consisting of twenty-four Cattleyas, eight Lælias, eleven Lælio-cattleyas, and one Brassocattleya, eighteen of which have also been raised by hand. Then comes a table showing their geographical distribution, showing seven from Mexico and Guatemala, one from Colombia, one from the Upper Amazon district, ten from Bahia, four from Minas Geraes, seventeen from the Rio de Janeiro district, and four from Santa Catherina. Two cases, however, are pointed out as doubtful. Taking the species from which natural hybrids have been recorded we find eight from Cattleya intermedia, five each from C. bicolor, C. Forbesii, C. Leopoldi and C. Loddigesii, four each from C. Schilleriana and Lælia albida, three each from C. guttata, C. Harrisoniana and C. Warneri, while thirteen species are credited with two each, and seventeen others with only a single one. Figures are given of C. × Hardyana, C. × Victoria-Regina, C. × Schrœderiana, Lælia × Finckeniana, L. × Gouldiana and Lælio-cattleya × Pittiana. The paper concludes with a complete bibliography, showing references to descriptions and figures, with full synonymy.

"Hybrid Odontoglossa," by De Barri Crawshay, F.R.H.S., is an

account of the various hybrid Odontoglossums which have been raised in gardens, now fifty-nine in number, four of which also occur wild, and five are secondary hybrids which may also occur in a wild state. The first of these was O. × Wilckeanum var. Leroyanum, which flowered in the collection of Baron E. de Rothschild, in May, 1890. As regards numbers M. Ch. Vuylsteke heads the list with twenty hybrids, Messrs. Charlesworth coming second with eleven, and Mr. Crawshay himself with seven. Mr. Crawshay considers that hybrids are more vigorous than species. He also collects further evidence in support of the theory that the so-called "blotched crispums" are of hybrid origin, as attempts to raise them artificially have not been very successful, owing to the reversion which takes place. And he remarks that "whoever first succeeds in raising blotched crispums in numbers and of good quality will have earned the gratitude and hatred of the owners of Odontoglossa, according to the way each looks upon the matter, viz., scientifically or commercially." We hope that they will preserve their equanimity, for we hold that the Orchidist who makes two blotched crispums grow where one grew before will have increased the sum of human happiness. A curious theory is discussed under the head of the "Latent Germ." Briefly it amounts to this, that not only the offspring, but also the mother plant's system may be influenced by crossing, so that if a given plant were crossed successively with different species some effects of an earlier crossing might be traced in the later result. We do not think there is much in the idea, but Mr. Crawshay has made experiments with three different plants, and also crossed two flowers simultaneously with different pollen, as a collateral means of testing the question. Mr. Crawshay concludes with a list of the hybrids, showing the date of their appearance, and reference to a published figure, and an analytical chart, showing the ancestry of the different secondary crosses. The paper is beautifully illustrated with thirty-three figures, twenty-one of them being from our own pages. Mr. Crawshay concludes by saying that at present we have only scratched the surface of the subject, both theoretically and practically, and that looking at the number of investigators and raisers now at work our knowledge will be increased a hundredfold in a few years more.

"The Germination of Orchids," by Noel Bernard, of the University, Caen, France, deals with the symbiotic relationship of Orchids and Fungi. He considers that fungi are invariably present, and that they can be separated and live for long periods apart from the roots in which they lodge, if placed on a suitable nourishing medium, yet the Orchids require the presence of their guests for their own development. In proof of this he shows the behaviour of germinating seeds in sterilised tubes, with and without these fungi. After examining large numbers of young Orchids

germinating in very varying conditions, he has noticed that they were "invaded by the fungus from the beginning of their life." It is a very interesting paper which will repay careful perusal. We may add that an illustrated paper by M. Bernard appeared in our last volume (pp. 201-203).

The other papers do not deal with Orchids, though they discuss numerous practical questions, the development and behaviour of hybrids in other groups, and the question of descent generally, in a way that should be of supreme interest to Orchidists. In short the volume is indispensable to every hybridist's library.

CALENDAR OF OPERATIONS FOR MAY.

By W. P. BOUND, Gatton Park, Reigate.

CATTLEYA HOUSE.—Many plants that flowered early in the year will now be growing apace, as well as those that bloom during the late summer months, and both will now require copious supplies of water. C. Mendelii and C. Mossiæ will be the conspicuous occupants here during this month, together with their many glorious hybrids. Until the flowers are removed from the plants they should be well supplied with water, afterwards reducing the supply till the young growths get well started. C. Warscewiczii (gigas) and C. Dowiana aurea should from now be grown as quickly as possible. Having been kept much drier at the roots than most other Cattleyas since the full development of last season's bulbs, they respond quickly when given a lively temperature and plenty of water, that is if they are well rooted. It should be borne in mind that these require a fair amount of strong light, especially the first-named, in fact we like to admit as much sunshine as the leaves will stand without scorching.

Cattleya Lawrenceana is once again more plentiful in collections; and this beautiful species should be kept well on the dry side after flowering, maintaining this course till the growths have made considerable headway. It is also advisable to place them where they have the full advantages derived from a free circulation of air, such as a position near a doorway. If they can be suspended, so much the better.

Cattleya intermedia and its beautiful varieties will now be passing out of flower, but the supply of water should not be reduced till the new bulb has reached full maturity. I think this mistake is often made by beginners in Orchid growing, treating the varieties that flower from the immature bulbs in the same way as those that finish and ripen their bulbs before flowering. Frequently this species will produce a second growth, and these occasionally flower, but it is seldom that any flower comes on the second growths on the albino varieties. Still, I like to get this second growth, having found that when they grow away again the same season they invariably make much better growths the next year than is the case when

they lie inactive for several months. A humid position should be found for this section, and one where they are fairly well shaded.

The pleasing hybrids in which Lælia cinnabarina has figured are not always so easy to manage as one's first impressions may convey. They are very easy to raise, and consequently they are often met with. At this season many are in flower, some developing, and others already over. Those developing and carrying flowers will need a fair amount of water, but after the flowering season is over they are best suited if kept well on the dry side till the new growths have more than half developed. Much water is essential during the actual making of the new bulbs, but at all other seasons allow them to become fairly dry before watering.

There are many plants in this house that will require attention as regards potting during this month and next. It frequently happens that plants of C. Mendelii, C. Mossiæ, and many hybrids, will emit collar roots just when the flower buds are developing, and if the plant is weakly it will be beneficial to remove the buds, as a better time can thus be given for potting. But if the plant only requires shifting on into a larger pot, no harm will accrue if done very carefully. One, however, very frequently meets with cases where the roots are ready for potting, and the plant requires it, yet it is not possible to carry it out, because the flower is wanted, and potting would necessitate the removal of all the old material and some of the back portions of the plant. In such cases let the potting be done when the plant starts into growth, as there is then a certain amount of renewed activity in the old roots, and although I like to pot as far as possible when new collar roots are being emitted, I have had good results from potting at the commencement of growth.

Cattleyas, like all other plants, require rejuvenating from time to time, and this can be done by cutting off the front portion of a plant when the new roots are being emitted, after which leave the old plant alone till it has made a fresh lead. Another method is to pull the plant to pieces carefully, and cut away all the old back parts, leaving not more than three bulbs behind each lead. Whichever system is followed it must be done with judgment, and only a few should be done at one time. Where Cattleyas have not been treated thus in the past it will take some considerable time to get all of them into the right condition, but unless you are prepared to forego flowers for a season it will be better to do them a few at a time. A vigorous front taken off will often make a fine plant the first season, but when a plant is treated that has been on the down hill course for some years, one must not expect too much from the first season's growth. Generally the plant will make a somewhat short and stunted bulb, but so long as the pot gets well filled with roots—and I may say that when plants are being rejuvenated in this way they should be put in the smallest pots possible—

the second year's growth will be found strong and vigorous, and the plant will have a new life before it. Of course its various requirements in other respects must be well looked after.

Plants that have been treated as just described should be staged together, as they will require much more shade than those that have not been so disturbed. They should also be kept well sprayed over, and frequently damped between the pots, but very little direct watering will be wanted for some time. A great deal of the success or failure of this operation depends on how the plants are treated immediately afterwards, and as they become established the conditions should be gradually changed till they take their place again with the general collection. Do not at first make the compost so firm as would be beneficial for a plant in good condition, as a second potting should be given before the plant is allowed to flower. If this principle had been followed in past years, I am sure there would not have been anything like such great mortality among Cattleyas and Lælias. I am also firmly convinced that unless the hybrids are thus treated from time to time they will go the same way that thousands of the species have gone before. My opinion is that any plant life that produces new growth from the base each year must in some way be rejuvenated if the best results are to be attained, and the plant is to enjoy life indefinitely.

LÆLIA JONGHEANA.—In the Intermediate house, plants of this species will be emitting new roots, and the necessary potting or surfacing should be done too. They are best suited when grown suspended, and a good compost consists of three parts of good peat to two parts of sphagnum, well mixed with small crocks and coarse sand. After potting, water should be carefully given, till the new roots have entered the new material. This Orchid has not finished its growth for some considerable time after flowering, and it is important that the supply of water afforded should be adequate to bring about full development.

CATTLEYA SUPERBA.—This now rather rare species is starting into growth, enabling any necessary renovation to be done. It is best at home when given a light position in the stove, or grown with the Dendrobiums, if such an house is kept. During the growing period they love much moisture, atmospherically and at the roots. Cattleya Eldorado may be treated in the same way.

PERISTERIA ELATA.—Plants that are not producing flower spikes will now be starting into growth, and potting should be done soon after the young growths gets away. It is well to pot these at least every other year, as they soon exhaust the material when growing freely. The compost used should be of a fairly retentive nature, such as one composed of one half loam and the other half made of equal parts of peat and leaf soil, mixed with plenty of small crocks and coarse sand. Afford a good drainage,

filling the pots one-third with crocks and rhizomes, and cover with rough material to prevent the fine particles working down. Potting should be done rather firmly, keeping the surface of the compost a little below the rim of the pot. A great mistake is often made by placing this grand Orchid in too shady a position. It requires a stove temperature, and it is essential to shade during bright days. If it can have the benefit of strong light and heat, with an atmosphere well charged with moisture during the growing season, it will thrive satisfactorily. Water should only be given for some time as the plants become dry, but when the growth is attaining its full dimensions, and swelling its new pseudobulbs, copious supplies will be beneficial. Flowering plants will require a fair amount of water whilst developing their spikes; the one point to observe being that the pseudobulbs are not allowed to shrivel: otherwise the new growth will be retarded from the start. It is a great pity that we so seldom see this and many another really magnificent Orchid in our present day collections. When the time again comes that Orchids are grown by amateurs for their beauty rather than for their value, many of the old-time favourites will once again be popular.

EPIDENDRUM VITELLINUM.—The growths on the form that produces its spikes during the autumn months will now be advanced sufficiently to enable any repotting or surfacing being done. If the plants are in good condition do not disturb them, beyond renewing the surface material for the new roots to enter. They love a strong light, and should be grown suspended in a buoyant atmosphere, in the Cool intermediate house, not far from a ventilator. The compost used for Cattleyas will be very suitable, and when growth is most active they should be well supplied with water.

LYCASTES.—Many of these, such as L. macrophylla, leucantha, aromatica, Skinneri, in its many fine forms, Deppei, and candida, will now be well started, and when the new growths are about three inches high is a very suitable time to carry out any repotting necessary. A good compost consists of two parts good fibrous loam to one part each of leaf soil and peat, with some small crocks and coarse sand. A good drainage is essential, pot moderately firmly, and surface with chopped sphagnum. Place them in the Intermediate house, and give frequent damping between the pots and overhead spraying, which will be helpful. For some time after potting, water only as they become well dry, increasing the supply as the growths develop.

BIFRENARIA HARRISONIÆ.—In the culture of this fine species I do not care to use any loam, preferring a mixture of one-half peat, the other half made up of equal parts of leaf soil and sphagnum. I also prefer growing them suspended, in the Intermediate house, where they can get much light. During the summer season they require water freely.

ONCIDIUMS.—In the Cool intermediate house O. Forbesii, O. varicosum, and O. crispum will now have their growth well away, and the necessary potting should be taken in hand, using a mixture of equal parts of peat and sphagnum, mixed with some crocks and sand. Ordinary pots that can be suspended are good receptacles, filling them nearly half full with rhizomes, removing any old bulbs. They should be grown suspended, and syringed freely overhead whilst flowering.

DENDROBIUM PHALÆNOPSIS.—When the growths have attained a height of about three inches is the season when the necessary potting, or the renewal of the surface material, should be done. Sometimes they are ready early in May, but frequently June is well in before the growths have got away, and it is good policy to wait. I would not advise disturbing them unless the compost is in a sour state, but when they are repotted let it be well done, so that they will go for at least two seasons. A suitable mixture consists of equal parts of good fibrous peat and chopped sphagnum, with some sand and small crocks. Ordinary pots are the best receptacles, using a drainage of rhizomes over a few crocks. It is desirable that the pots used should be as small as possible, according to the size of the plants. Potting should be done firmly and the compost kept low enough to allow of a surfacing of chopped sphagnum. After potting, water should be carefully given for some time, and just enough to prevent shrivelling will be ample till the new roots have well entered the compost, when the supply may be increased, and this course continued till the flowering season is over. A very light position in the stove temperature should be given them, and I have seen some of the best growths made in an ordinary plant stove. The great point is when once they have made a good start to grow them as quickly as possible. This same treatment is very suitable for D. superbiens, and D. atroviolaceum, in fact the New Guinea species generally.

DENDROBIUM FUSIFORME.

AN interesting and beautiful Queensland Dendrobium has just flowered in the collection of Sir Charles Strickland, Bart., Hildenley, Malton, and has been identified as Dendrobium fusiforme, a species described by F. M. Bailey in 1878 (*Proc. Linn. Soc. N.S. Wales*, ii. p. 277). It is most like a dwarf slender form of D. speciosum, but differs in having fusiform pseudobulbs, seldom exceeding a foot long, and very slender racemes, six to ten inches long, of white or light yellow flowers, with a number of transverse purple lines on the lip. It was originally described as D. speciosum var. fusiforme (*F. M. Bail. Syn. Queensl. Fl.* 509). It is said to be common on the trees of the northern coastal scrubs, and was originally collected at Herberton. Sir Charles Strickland's plant was collected in Queensland, and sent home by his son, Mr. W. W. Strickland. A plant flowered with Messrs. B. S.

Williams and Son in 1885, but was then considered as a slender form of D. speciosum. It also had been received from Queensland.

DENDROBIUM SPECIOSUM.

Mr. Bailey has studied the well-known D. speciosum in its native

FIG. 14. DENDROBIUM SPECIOSUM VAR. HILLII.

habitat, and in his *Queensland Flora* (v. p. 1520) shows it to be more variable than is sometimes realised. It may be interesting to give a summary. The typical form, so long known in cultivation, he defines as

having stems very thick and fleshy, six to fifteen inches high, leaves three to six inches long, racemes often over a foot long, flowers rather large and pale yellow, and the lip white, spotted with purple. It is found on mountain tops on Bellenden Ker and other ranges in the north. He gives the native names as "Dhumbee" and "Tar-beri." Figures cited are *Bot. Mag.* t. 3074, *Bot. Reg.* t. 1610, and *Fitzg. Austral. Orch.* ii. pt. 4, t. 21. The New South Wales plant seems to belong to typical D. speciosum; that from Victoria I have not seen, though it probably agrees. The plant figured in the *Orchid Album* (v. t. 198) as D. Hillii, Hook., has the short stout bulbs of D. speciosum. Some interesting particulars respecting this beautiful "Rock Lily," by the late Mr. R. D. Fitzgerald, were reproduced at page 106 of our tenth volume.

VAR. HILLII, F. Muell., is the form originally described by Sir William Hooker as D. Hillii (*Bot. Mag.* t. 5261), and it is said to be the common form in Queensland, and the one to which the aboriginal name is usually applied. The stems are described as three feet or more high, the leaves a foot or more long, and the racemes 1½ to two feet long, and the flowers usually white, turning to yellow, with a purple border to the lip. It is this beautiful variety which is figured on the preceding page, as may be seen by its long slender stems. The photograph was sent by J. M. Davidson, Esq., Stanley Street, S. Brisbane, Queensland, to the Right Hon. J. Chamberlain, M.P., who kindly forwarded it to us. The plant is growing on the branches of a tree in the open air, and thriving in a way never seen in European hothouses.

VAR. BANCROFTIANUM, Rchb. f. (*Gard. Chron.* 1881, i. p. 782) he apparently does not know, but gives it as having the robust habit of var. Hillii, but the flower segments longer and narrower, adding that it is supposed to be a northern form. Reichenbach originally remarked: —The stem is even more slender than that of D. Hillii, Hook., and that alone affords a good mark for distinction." This is precisely the case with two specimens preserved at Kew, one recorded as from Northern Australia, the other from New Guinea, but the latter locality requires confirmation.

VAR. GRANDIFLORUM, F. M. Bail., was described in 1896 (*Bot. Bull.* xiv. p. 12), and is said to have a more vigorous habit than var. Hillii, the leaves often over a foot long by nearly six inches broad, and the flowers deep yellow from first expanding until they decay. It occurs at Eumundi, on the North Coast Railway Line.

VAR. CURVICAULE, F. M. Bail. (*l.c.* p. 12), has the stems curved, some almost into a half circle, compressed, 9 to 12 inches long, often 1½ inches broad, the leaves about five inches long, two inches broad, often concave, the racemes nine or ten inches long, and the flowers cream, with the sepals thick, curving outwards, and only six or seven lines long by nearly half as

broad, and all parts of the lip marked with thick purple bars. It occurs at Lady Elliott's Island.

VAR. NITIDUM, F. M. Bail., dates from 1885 (*Proc. Roy. Soc. Queensl.* i. p. 10), and has numerous slender stems, 1½ to 2 feet high, and often not more than half an inch broad, with lanceolate leaves, 6 to 7 inches long, by 1½ to 2 inches broad, racemes 6 to 8 inches long, bearing from 20 to 30 white flowers, 6 to 7 lines long, and the lip with short purple lines at the base. It is a native of tropical Queensland.

An allied species should be mentioned here, as it was originally described in 1885, as D. speciosum var. delicatum, F. M. Bail. (*Proc. Roy. Soc. Queensl.* i. p. 11), but was afterwards made a species—

D. DELICATUM, F. M. Bail. (*Queensl. Fl.* v. p. 1527). It is said to have numerous stems, often forming large patches on rocks, &c., slender above but often much enlarged at the base; leaves three or four at the apex, rather thin, 3 to 5 inches long, by ¾ to 1¼ inches broad, racemes 7 to 8 inches long, with eight or nine distant fragrant white flowers, 6 to 8 lines long, and the lip white, speckled with purple. The locality is given as Main Range, near Toowoomba.

ORCHIDS AT ENFIELD.

BY J. M. BLACK.

I FOUND a keen pleasure in going through the Orchid department of the very extensive Nurseries of Messrs. Hugh Low & Co., Bush Hill Park, Enfield, and notwithstanding the enormous number of Orchids cultivated here, I found the houses well and orderly arranged, the work well in hand, and the plants particularly clean and strong. This collection is well stocked with the more curious than beautiful kinds of Orchids, as well as the popular plants of commerce, and it will be quite impossible for me in a short note to do anything like justice to all.

Special features of this collection are the choice Cypripediums, albino Cattleya species, choice Dendrobiums, the unique lot of flowered and unflowered Cattleya Mendelii in sheath, the unique lot of Odontoglossum Pescatorei, and the very complete collection of Cymbidiums. My visit took place about the middle of March, and I shall now endeavour to give a short review of the houses as they were then.

The Odontoglossums are spread over several houses, the first entered being full of O. crispum, some seven thousand plants, perhaps half the number not yet flowered. Among a number of semi-established plants some very meritorious varieties were opening, being full in form and having sufficient evidence of spotting to give hope for good things to come. It is interesting to record, in view of recent discussions, that these were imported from the districts round Velez. There was a good show of flowers in this

house. The good varieties were arranged together at one end, and included the following, many of which were duplicated :—Odontoglossum crispum varieties—Queen Victoria, The Tsar, Victoria-Regina, The Earl, Jeanette, Luciani, Annie, Lindeni, Raymond Crawshay, xanthotes Walkeriæ, and a variety of great promise named Prima Donna. Two good varieties of luteo-purpureum were Coundon Court var. and Vuylstekeanum. There were also many O. × excellens, O. × Adrianæ, including Low's var. (in flower), O. Uro-Skinneri album, O. bictoniense album, many O. × Harryano-crispum, &c. Suspended were numbers of Sophronitis cernua and S. grandiflora brilliantly in flower, there being an exceptionally fine specimen of the latter species in a basket. Raised on pots among the Odonto-glossums were a number of Cymbidium Lowianum concolor, C. ensifolium, some strong plants in flower of C. × Wiganianum, large finely-marked varieties raised in the collection, C. insigne and C. tigrinum, the latter a rather rare species.

The next house, the same size as the foregoing, is also devoted to Odontoglossums, and is one-half full of O. Pescatorei, an endless number of which were in flower, and the type was an excellent one. O. Pescatorei is, when well grown, most generous with its blooms, and its branched scape is one of the most graceful in the genus, but it is somewhat weedy unless well grown. I think I am right in saying that O. Pescatorei is not generally so well done as O. crispum, but it seemed to me that the reverse was the case at Messrs. Low's, and, as an honest chronicler, I will give what I consider the reason. The house in which the Odontoglossums are grown here are much higher pitched than seems good for Odontoglossums, for this means more heat in summer than flatter roofed houses would catch. I also thought that the atmosphere on the day of my visit was dryer than seemed good for Odontoglossums in the middle of March, and although this might have been fancy I noticed the same feeling when here six years ago. I do not wish to be misunderstood, for both O. crispum and O. Pescatorei were doing well, but I could not help feeling that the latter were having the best of it. Is this the secret, that a dryer and possibly slightly warmer atmosphere than is usually given to O. crispum will suit O. Pescatorei better? Although there were comparatively few Pescatorei in this estab-lishment when I was here before, the few were excellently well done, hanging in pans with bulbs like cricket balls. Hanging in pans were O. Cervantesii, and others, while raised on pots were a further lot of Cymbidiums, namely, eburneum, × Winnianum, Lowianum concolor in spike, Hookerianum, and others, besides Oncidium maculatum, robust pieces of Odontoglossum Edwardii, &c.

In a cool corridor away from the sun an interesting experiment was being made with a batch of Cattleya Mossiæ, having an aggregate of 1,500-

2,000 sheaths. These plants, having finished their growth, were being kept perfectly cool and airy, and away from sunshine, for the double purpose of retarding them and giving them a rest. They were being kept very dry, and it is hoped that thus thoroughly resting them after they have sheathed may help the plants constitutionally; and really this treatment seems to me very reasonable, and it will be most instructive to know if good results follow. Cattleya Mossiæ has a bad name, and perhaps here is a solution of how to keep it vigorous though old. These plants were strongly rooted and well ripened. Robust specimens of Oncidium macranthum and other plants were at the end of this corridor.

The next house contained Oncidium luridum in spike, good specimens of Cattleya Bowringiana, strong plants of C. Lawrenceana suspended, C. Schilleriana in sheath, &c., and beyond these in the next division were an interesting lot of Cattleya and Cypripedium seedlings; also a number of Sobralia violacea alba seedlings. The last had been fecundated with its own pollen.

The next two houses entered were also devoted to Odontoglossums of various kinds, including a fine lot of triumphans. There were besides many kinds of Oncidiums in this house, and representatives of other cool-growing genera.

We now come to the Cypripediums, which are contained in two houses having centre and side staging. Some alterations were being made here. The centre staging instead of rising in tiers, as is usually the case in houses of this description, was being brought down to nearly one level, so as to avoid one side of the house being at any time shaded. This staging now stands quite free on pillars, there being no double staging underneath to impede the free passage of air up through the plants. A rain water tank, open, runs along the centre of houses, which seem admirably adapted for the growing of Cypripediums. The plants themselves were in very fine condition, and among the few still in flower was an excellent form of C. × Maudiæ raised in the collection. Messrs. Low make every effort to keep their collection of choice Cypripediums up to date, and in this respect it is probably unrivalled in the trade. It will of course be impossible to mention many of them here, but the following are hybrids of the first water: —aureum Hyeanum, a. virginale, a. Surprise. a. (Edippe (these Mr. Low considers the four best forms of aureum), Euryades splendens, E. magnificum, E. New Hall Hey var., Minos Youngii. Thalia giganteum, T. Mrs. F. Wellesley, T. Schofield's var., chrysotoxum Victor, Mrs. Wm. Mostyn, Chardwar var., fulshawense, Daisy Barclay, Germaine Opoix, with the Westfield var. (the only plant outside the Westfield collection), Watsonianum, Tracyanum, Prospero majus, Baron Schröder, triumphans, Milo, Westonbirt var., Lecanum Corona (part of recently certificated plant),

while Actæus is represented by the fine varieties—langleyense, Drewett's var. and Fowler's var.

Among the bellatulum and niveum crosses mention might be made of Mrs. E. V. Low, Muriel Hollington, Gertrude Hollington, Venus, Queen of Italy, &c. One of the side stages is full of yellow and special varieties of insigne, among which are Harefield Hall var., Lucianianum, Sanderianum, Sanderæ, Laura Kimball, Greenbank var., Chantini Lindenii, Berryanum, and the extremely rare Bohnhoffianum. The stage in the corridor facing these houses is full of Cypripedium niveum, and standing among these was a nice batch of the albinos, C. Lawrenceanum Hyeanum, C. callosum Sanderæ, and C. × Maudiæ. Hanging in one of these houses were ten good plants of the curious and lovely Bulbophyllum virescens, for which the late Sir Frederick Wigan received a F.C.C. at Holland House Show last year.

The next two houses under inspection were lean-tos with northern exposure. These have been recently built to grow such plants as the various Oncidiums which require a cool atmosphere, and of which large quantities are grown here. Besides the Oncidiums, among which was O. ornithorhynchum album, there were Cattleya citrina in bud, a lot of Lycaste Skinneri, including some white varieties, several plants in two varieties of the rare yellow-barred Odontoglossum grande, &c. Among a number of plants of Cattleya intermedia alba in sheath, being kept back, were two very fine specimens having six and ten sheaths respectively, which should make a fine display.

The first Dendrobium house was full of the various species, in big batches. Six cases of recently imported D. Wardianum had just been potted up, and before these lines are in print another sixteen cases, largely of this fine old species will have arrived. In the next house were grown the choice Dendrobiums, of which there were a most complete and up-to-date collection. Many were in bloom, including the various Findlayanum, nobile and aureum hybrids. The two secondary signatum hybrids, Thwaitesiæ and chessingtonense, were also noted, the former being in flower, its bronzy-yellow blooms being most distinct. There was also a big lot of nobile virginale in this house. This is an exceedingly fine Dendrobium, and is likely to be extensively grown, being admirably adapted for floral work where chaste flowers are required. It is also a good grower.

There is an overwhelming number of Cattleyas grown at Bush Hill Park, the stock of Cattleya Mendelii alone being sufficient to fill several houses, and the culture leaves nothing to be desired. I will briefly scan these houses. The first Cattleya house had one side full of C. Harrisoniana and C. Bowringiana, while the other side was full of proved C.

Mendelii in sheath. The next house contained C. Trianæ; while the next had many thousands of C. labiata, some fine specimens, and also large quantities of Oncidium oblongatum and O. Wentworthianum, the former flowering in July, while the latter comes in a month later. There were also in this house three exceptional specimens of Oncidium phymatochilum having an aggregate of twenty-seven spikes, a batch of O. Cavendishianum in spike, &c.

The Lælia anceps, which include the best varieties, are next seen in the corridor. We now come to a house full on one side of unflowered C. Mendelii in sheath, while the other side was full of C. Gaskelliana. We reach the high water mark of Cattleya culture in this house. The C. Gaskelliana have been in culture for several years, but they keep on multiplying their leads with pleasing consistency, and the plants were bristling with new breaks, wide and strong, and there would have been no difficulty in picking out fifty plants having an average of ten leads each. These were not originally large pieces, and are even now in relatively small pots. A plant picked up at random had nine bulbs and seven breaks, and this percentage would nearly have worked out throughout the batch. Too much could not be said for the vigorous and compact plants of C. Mendelii—clean, distinct-looking, and full of sheaths. The house following was filled on one side with C. Schrœderæ in bud and flower, some good varieties being open, and on the other side were a further lot of C. Mendelii. The next house was full of C. Schrœderæ, gigas, &c., the former occupying one-half the space. Then comes a house having on one side unflowered C. Mendelii in sheath, and the other side C. Mossiæ in sheath. The next house contained C. Skinneri and fine specimens of C. Gaskelliana unflowered.

We now come to the Cattleya house containing the choice varieties, and this will require closer inspection. The Cattleya Trianæ were mostly over at the time of my visit, but plants of the following lovely varieties were noted in stock: Westonbirt var., Jonesiana, Lowiæ, Optima, Mrs. De Barry i Crawshay, Titania, The Don, Mrs. Edward Sondheim, alba-violacea, Goliath, Empress of India, Emerald, Bona, and many other less known choice varieties. A plant whose flowers were being looked forward to with much impatience and expectancy was a supposed C. speciosissima alba. This was sent over as a white C. Mossiæ. This plant had been growing in the establishment for four years without flowering, but was now in bud. It had, however, in the meantime been duplicated, and there were several plants of it hanging up together. There were also a nice lot of C. Skinneri alba, a score or so C. Gaskelliana alba, a large number of C. intermedia alba, one of the largest lots of this free-growing and free-flowering pure white Cattleya in the country; also two plants of C. i. cærulea, a pure white form of good shape having a blue lip. Next came a lot of the

rare C. labiata alba varieties, numbering some sixty plants, including — Daphne, Mrs. E. Ashworth, Amesiana, La Vièrge, alba (in two forms), Lady Duff, reedleyensis, Cooksoniæ, Gilmouri, Queen Maud, King of Greece, The Pearl, lilacina, F. W. Ashton, glauca, Mr. G. H. Müller, G. G. Whitelegge, R. I. Measures, Laura, Pride of Southgate, Etona, Sanderæ, &c., a fairly formidable list. Among the choice Lælia purpurata were bella, Daviesiana, Duckworthii, Annie Louise, Lowiæ, Littleana, and the two famous albino varieties Lewisii and Ashtoniæ. There were several plants of C. Percivaliana "Little Gem," which has white sepals and petals and lilac on front of the lip. The white varieties of C. Mossiæ occupied twelve feet of staging space. C. gigas Frau Melanie Beyrodt, the famous albino which this firm has placed in nearly all the good Cattleya collections in Europe, is represented by two plants. This plant has a wonderful constitution, and simply delights in being cut up. To illustrate this, a leading bulb which had been cut off before last growing season made two growths nearly equal to itself in size. Besides these mentioned were many hybrids, C. Dowiana Rosita, C. Mendelii Mercury, a large lot of choice C. Schrœderæ, and a multitude of good things whose names I cannot find room for. Three other houses of Cattleyas—Mendelii, Percivaliana, fine specimens, Mossiæ, &c., were visited after this, but I have already overstepped my space. Some idea of the extent of this place can be formed when it is known that the houses are mostly 100 and 150 feet long, a few being 80 feet.

The treatment of the Orchids can best be described as particularly cool and airy. I did not enter a house which felt in any way hot or oppressive, the Cattleya houses being surprisingly cool; and with the happy results of this treatment before my eyes, Mr. E. V. Low's remark that more Orchids were injured by too much heat and too much water than by any other means drove home conviction.

PHALÆNOPSIS ROSENSTROMII.

IT is interesting to find a Phalænopsis recorded from North-east Queensland. Mr. F. M. Bailey has just described the above (*Queensl. Agric. Journ.* xvii. p. 231), as a new species, collected by Rosenstrom, "on trees, high from the ground, Daintree River." I do not, however, see by what characters it is to be separated from the well-known P. amabilis, Blume. which is known to extend eastwards to Timor, Amboyna and Ke island. It is described as bearing a panicle composed of racemose branches of about 10 inches long, each with about eight to ten showy white flowers, here and there stained with yellow; the petals about 13 lines broad: and the lip three-lobed, with a two-horned callosity at the base; lateral lobes curved over the base of the segment: middle lobe somewhat strap-shaped. and bearing at its apex two twisted cirrhi.

R. A. R.

LÆLIO-CATTLEYA WOLTERÆ AND ITS PARENTS.

WE are now able to give a figure of the pretty little Lælio-cattleya Wolteræ (fig. 15), which was described at page 30 of our February issue, together with those of its two parents, Cattleya Loddigesii ♀ and Lælia anceps ♂, the group being reproduced from a photograph kindly sent by M. Paul Wolter. A second photo shows the entire plant with the flower. The plant is most like the Lælia parent in habit, and the scape is somewhat elongated, with ancipitous sheaths, and at present one-flowered, but the pseudobulbs are two-leaved. As regards the shape of the flower, little need be said, but we may point out the resemblance to the Lælia parent in the shape of the petals, otherwise it is fairly intermediate in character. The sepals and petals are rose-pink, and the lip white, with a rose-purple

Fig. 15. LÆLIO-CATTLEYA WOLTERÆ.
Fig. 16. LÆLIA ANCEPS. Fig. 17. CATTLEYA LODDIGESII.

apex, and some reddish purple radiating veins on the disc, which also show the influence of the Lælia parent. It should develop into a fine thing when the plant becomes strong, as both parents have several-flowered scapes.

LELIA ANCEPS (fig. 16), the pollen parent of the preceding, is a very popular winter-flowering plant, which was introduced as long ago as 1843, and has been continuously cultivated ever since. The figure shows the well-known rosy purple type.

CATTLEYA LODDIGESII (fig. 17), the seed parent of the preceding, is equally well known, and was introduced a quarter of a century earlier, in 1810. It is very common in cultivation, and its pretty mauve-purple flowers are very useful during late summer and autumn.

SOCIETIES.

ROYAL HORTICULTURAL.

THE first meeting of the month was held at the Royal Horticultural Hall, Vincent Square, Westminster, on April 2nd, when there was a very fine display of Orchids, and the awards consisted of seven medals, one First-class Certificate, and four Awards of Merit.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), staged a very fine group, which received a Silver-gilt Medal. It contained numerous choice forms of Cattleya Trianæ, white and coloured, the former occupying the centre, bearing an aggregate of about forty blooms, C. Schrœderæ, with the richly-coloured variety W. Duckworth, some good examples of Oncidium concolor, a good selection of Lycaste Skinneri, including about twenty flowers of var. alba, &c., with Cymbidium Lowianum at the back. An Award of Merit was given to Cattleya Trianæ Mooreana, having light rosy lilac petals with a purple feather at the tip, and a richly-coloured lip.

N. C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), also received a Silver-gilt Flora Medal for a brilliant group, containing some very richly-blotched forms of Odontoglossum crispum, the beautifully spotted O. Pescatorei Thompsonianum, good examples of O. × loochristiense and O. × Adrianæ, a very dark O. × Vuylstekei, a superb specimen of Phaius × Cooksoni with nineteen spikes, a series of P. × Norman, P. × Clive, a fine example of Dendrobium × Sibyl superbum, and other good things.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received a First-class Certificate for Lælio-cattleya Baroness Schröder, Westonbirt var. (L. Jongheana × C. Trianæ), a remarkably fine form, having rose-pink sepals and petals, with darker veins, and a darker lip, with a deep orange throat. He also sent a fine cut example of Dendrobium fimbriatum oculatum, Westonbirt var.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), received an Award of Merit for Lælio-cattleya Lawrie (C. Lawrenceana × L.-c. warnhamensis), a handsome thing, having bright purple flowers with a darker lip. Several examples were shown, varying in colour from bronzy orange to deep rose-purple.

W. Waters Butler, Esq., Edgbaston, Birmingham, sent the brightly-coloured Odontoglossum × Wilckeanum King of Spain, and a fine example of Cymbidium insigne, one of the spikes bearing ten flowers, which had been open for a month, but were still good.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), showed a brightly-coloured yellow Odontoglossum, blotched with brown, with the ground colour of the lip white. It was near O. × Hallio-crispum.

The Rev. D. J. Stather Hunt, Tunbridge Wells (gr. Mr. Baker), sent a series of Lælia × Statheræ (purpurata × flava), varying from cream-colour to primrose-yellow, with purple markings on the lip.

F. Menteth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), sent Cypripedium niveum Ajax, Cymbidium × eburneo-Lowianum, Shrubbery var., with four spikes, and Odontoglossum crispum Fergus, a good form, with a good deal of light purplish rose in the flower.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), showed the richly-coloured Odontoglossum × Wilckeanum Schræderianum.

Messrs. Armstrong and Brown, Tunbridge Wells, staged a beautiful group of about 150 compact plants of Dendrobium nobile virginale, all raised true from seed from the same capsule, a very beautiful exhibit which gained a **Silver-gilt Flora Medal.**

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Flora Medal for a brilliant group, including some beautiful forms of Odontoglossum × Ossultoni, O. × Rolfeæ, O. × amabile, O. × Wilckeanum, O. crispum, and two remarkably diverse forms of O. × Sylvia (cirrhosum × Rolfeæ), one having a cream-coloured ground, the other bright yellow, and both prettily spotted with purple. The group also contained some good Miltonia × Bleuana, Lælio-cattleya Dominiana, Brassocattleya Digbyano-Mendelii, the brilliant Sophrolælia Psyche, and other good things.

Messrs. Sander & Sons, St. Albans, also received a Silver Flora Medal for a choice group, including Odontoglossum × ardentissimum inversum Butterfly, a very finely shaped white flower, with light purple-rose spotting, O. × Wilckeanum J. Gurney Fowler, an exceptionally large and richly coloured form, some good Lælio-cattleyas, Arpophyllum giganteum, Lycaste Skinneri alba, the handsome *Zygopetalum* × Gottianum, Schomburgkia undulata, the handsome Cœlogyne Lawrenceana, Cattleya Trianæ Rex, a very fine form, C. Schræderæ Gloire de Bruges, a pretty lavender-tinted flower, with some reddish violet in the front of the lip, &c.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a pretty group, including some good Dendrobium nobile, D. × Ainsworthii, D. Wardianum, the rare D. Ruckeri, Angræcum Leonis, &c.

Messrs. James Veitch & Sons, Chelsea, also received a Silver Banksian Medal for an interesting group, containing Cypripedium × aureum Hyeanum, C. × Countess of Carnarvon (villosum giganteum × Euryades), having a broad rose-coloured dorsal sepal, margined with white, Cattleya Schræderæ, C. Trianæ alba, Lælio-cattleya highburiensis, Epilælia × Eva (E. aurantiacum × L. cinnabarina), bearing a single orange-scarlet flower, **and others.**

Messrs. Linden, Brussels, sent two Odontoglossum × exultans (O. × excellens × crispum bellatulum), having yellow flowers finely blotched

with reddish purple, O. × Jorisianum (luteopurpureum × triumphans), and O. crispum Roi d'Angleterre, the latter a very handsome seedling, heavily blotched with light purple, which gained an Award of Merit.

M. Th. Pauwels, Meirelbeke, Ghent, received an Award of Merit for Odontoglossum crispum album, Orchid Villa var., a beautiful pure white form of fine shape, with a few orange-yellow blotches on the lip.

AT the meeting of the Scientific Committee held on this date, Mr. H. J. Chapman remarked that when two species of Phaius were crossed, the pollen of the resulting hybrid was infertile, but if the hybrid were pollinated with pollen from either parent good seed was produced, and the pollen from these secondary crosses was fertile.

AT the meeting held on April 16th there was again a very fine display, and the awards consisted of six Medals, three First-class Certificates. one Award of Merit, and three Cultural Commendations.

H. S. Goodson, Esq., Putney (gr. Mr. Day), received a Silver Flora Medal for a fine group, containing some fine Lælio-cattleya luminosa, L.-c. Dominiana, and L.-c. highburiensis, several good Cattleya intermedia nivea, Angræcum sesquipedale with five flowers, and others. A First-class Certificate was given to Odontoglossum × ardentissimum var. Herbert Goodson, a very fine and heavily blotched form.

C. J. Lucas, Esq., Horsham (gr. Mr. Duncan), received a Silver Flora Medal for a beautiful group of Odontoglossum crispum, O. × Rolfeæ, O. Hallii, two good O. × Ossultoni, &c. An Award of Merit was given to O. × Othello (Harryanum × Adrianæ), a beautiful hybrid having yellowish white flowers, heavily blotched with chocolate-brown on the sepals and petals, and with purple at the base of the lip.

J. Gurney Fowler, S. Woodford (gr. Mr. Davis), also received a Silver Flora Medal for a very beautiful group, containing a series of finely-grown Cattleya Schrœderæ, showing much variation, C. intermedia, Fowler's var., C. Lueddemanniana Stanleyi, some well-bloomed Dendrobium Wardianum, Cymbidium × J. Gurney Fowler, a very fine cream-white flower, with some purple spots on the lip, the handsome Zygopetalum × Perrenoudi, and its var. Cecil Rhodes, &c.

Major Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), received a First-class Certificate for Sophrolælia Phroso superba, a very richly-coloured hybrid (noted on another page) and Cultural Commendations for Cattleya Mendelii, Westonbirt var., a noble specimen bearing sixteen fine flowers, and for Odontoglossum × Adrianæ var. Lady Wantage, bearing six spikes and an aggregate of 105 flowers, the best having twenty-six. He also sent Brassocattleya Cordelia (C. intermedia × B. Digbyana).

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), received a Cultural Commendation for two splendid inflorescences of Phalænopsis amabilis (grandiflora), the best having three branches and an aggregate of forty-five very fine flowers.

J. T. Bennett-Poe, Esq., Cheshunt (gr. Mr. Downes), sent the pretty yellowish white Cymbidium × Colmaniæ flavescens.

De Barri Crawshay, Esq., Sevenoaks (gr. Mr. Stables), sent Odontoglossum triumphans Imperator and Theodora, and O. × Iago (Harryanum × Hunnewellianum), an interesting hybrid that is described on page 158.

R. I. Measures, Esq., Camberwell (gr. Mr. Smith), sent two specimens of the pretty Cymbidium × Lowgrinum.

Francis Wellesley, Esq., Westfield (gr. Mr. Hopkins), sent Lælio-cattleya stellata (L. xanthina × C. intermedia alba), a pretty hybrid having greenish sepals and petals, a white lip with some rosy veining and a rosy blotch on either side of the front lobe.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a remarkably fine group, which gained a Silver-gilt Flora Medal. It contained a beautiful series of Odontoglossum × Rolfeæ, O. × Ossultoni, O. × ardentissimum, O. × Othello, O. × Wilckeanum and O. crispum, a fine series of Lælio-cattleya Wellsiana, Dominiana, and Mercia, a dark form of Cymbidium × I'Ansoni, Masdevallia Chestertoni, Miltonia × Hyeana, Cattleya intermedia alba, some beautiful Brassocattleya Digbyano-Schrœderæ, and other fine hybrids.

Messrs. James Veitch & Sons, Chelsea, received a Silver Flora Medal for a fine group, including a beautiful series of Cattleya Schrœderæ, Odontoglossum × ardentissimum Lamus, and other showy Odontoglossums, a very richly-coloured Lælio-cattleya Canhamiana, a fine example of Dendrobium thyrsiflorum, &c. A First-class Certificate was given to Brassocatlælia × Veitchii (L. purpurata × B.-c. Digbyano-Mossiæ), a superb hybrid, having the sepals and petals white tinged with rosy lilac, and the lip rose-purple in front, with a lighter fringed margin, and the disc light yellow, veined with purple in the throat.

Messrs. Armstrong & Brown, Tunbridge Wells, also received a Silver Flora Medal for a fine group, containing some good Dendrobium × Venus, D. × Sibyl, and other showy hybrids, a number of Cypripediums, including the beautiful C. × Maudiæ, some good hybrid Zygopetalums and Zygocolax, Odontoglossum × excellens, &c.

Messrs. Hugh Low & Co., Enfield, staged a pretty little group including some good Cattleya Schrœderæ, C. × Lawre-Mossiæ, a fine example of C. amethystoglossa, Bifrenaria Harrisonæ, the remarkable Coryanthes speciosa, Lycaste Skinneri alba, and various hybrid Cypripediums, including C. × E. J. Seymour (callosum × Prewettii), a fine

thing, having a light green dorsal sepal lined with purple and bordered with white, and the petals and lip tinged with brownish rose.

Messrs. Sander and Sons, St. Albans, sent the beautiful Cymbidium Parishii Sanderæ.

Messrs. Stanley and Co., Southgate, sent a small group, including some good Cattleya citrina, Odontoglossum Edwardii and O. crispum, Oncidium Marshallianum, and O. sarcodes, &c.

The Report of the Scientific Committee meeting of this date includes the following:—

Plants exhibited.—A species of Megaclinium, with the curiously flattened rhachis, was shown by J. B. H. Goodden, Esq., F.R.H.S., of Sherborne, Dorset; another Orchid, under the name of the "beetle" Orchid of Australia, with flowers curiously simulating a beetle with long antennæ, shown by Mrs. Whitlaw, of Amerden, Taplow, and an interesting bigeneric hybrid between Diacrium bicornutum and Epidendrum Ellisii, with flowers of a pinkish colour shown by J. Colman, Esq., of Gatton Park. The terrestrial Orchid, Satyrium coriifolium (*Bot. Mag.* t. 2172), was shown by Messrs. Ware. It has a long spike of yellow flowers, having the labellum at the upper part of the flower, since the ovary is not twisted as in most Orchids. A vote of thanks was unanimously proffered to the exhibitors.

A third meeting was held on April 30th, when there was again a most brilliant display, and the awards consisted of five medals, three First-class Certificates, four Awards of Merit, two Botanical Certificates, and one Cultural Commendation.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), staged a magnificent group, to which a Silver-gilt Medal was deservedly awarded. The plants were well grown, and arranged so that the character of each individual plant was well shown. It contained the following:—An enormous specimen of Cattleya Schrœderæ, very well flowered (Cultural Commendation), C. intermedia nivea, a beautiful example of the peloriate C. i. Aquinii with a 7-flowered spike, C. × Lawreglossa, C. × William Murray, the rare C. × guatemalensis, Lælio-cattleya Cholętiana with a beautiful spike of nine flowers, L.-c. Adolphus, L.-c. highburiensis, L.-c. Mercia, with a peculiar cream-coloured variety, L.-c. G. S. Ball, L.-c. Doris, L.-c. Templeana (L.-c. elegans × C. Lueddemanniana), Lælia × Mozart (Boothiana × purpurata), Epidendrum Ellisii, E. arachnoglossum, E. glumaceum, a nice group of cut E. radicans and E. Schomburgkii, Brasso-cattleya nivalis, Epilælia latochilum, a fine form of Sophronitis grandiflora, the fine Dendrobium × Dalhou-nobile and D. × formoso-Lowii, Masdevallia × igneo-Estradæ, a fine Phaius Wallichii, Cœlogyne Lawrenceana,

Calanthe veratrifolia, with three spikes, Pleurothallis Grobyi, Oncidium leucochilum, concolor, Cebolleta, and carthaginense, the rare Angræcum Germinyanum, Sarcochilus Fitzgeraldi, Miltonia × Bleuana nobilior, Maxillaria luteo-alba, Cypripedium × Mrs. H. Druce, and C. × Berkeleyi.

J. Gurney Fowler, Esq., S. Woodford (gr. Mr. Davis), received First-class Certificates for Brassocattleya Schrœdero-Digbyana, an exceptionally fine white flower with a yellow throat to the open, neatly fringed lip, and Brassocatlælia Fowleri (C. Schrœderæ × Brassolælia Mrs. M. Gratrix), a remarkable deep salmon-coloured flower with the throat yellow and the margin of the lip fringed.

Major Holford, C.I.E., C.V.O., Tetbury (gr. Mr. Alexander), received Awards of Merit for Brassolælia Gipsy (C. × cinnabrosa × B.-l. Helen), having rich bronzy purple sepals and petals, and the lip whitish, with radiating purple veins and a yellow throat; and for Lælio-cattleya Ganymede (L. × Latona × C. Schrœderæ), with salmon-yellow sepals and petals, the throat of the lip yellow, and the front lobe rich purple-crimson, extending round the side lobes as a narrow margin.

The Marquis de Wavrin, Chateau de Ronsele, Ghent (gr. M. de Geest), received an Award of Merit for the beautiful Lælio-cattleya × Frederick Boyle var. Kerchoveæ, white with a deep yellow throat to the lip.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), sent Cattleya × William Murray, Gatton Park var., and Acineta Humbloti var. Colemanii, the latter receiving a Botanical Certificate.

De Barri Crawshay, Esq., Sevenoaks (gr. Mr. Stables), sent Odontoglossum crispum Poultoni, a fine form having a group of rich purple spots about the centre of each segment, a second well-blotched form, and O. × hellemensis, a fine yellow natural hybrid, supposed to be from O. loochristiense and O. crispum, with a group of red-brown spots on the sepals and lip, and a similar group of smaller dots on the petals.

Miss Violet Fellowes, Shoterham Park, Norwich (gr. Mr. Smith), sent cut blooms of a very fine blush form of Cattleya Schrœderæ.

H. Little, Esq., Twickenham (gr. Mr. Howard), sent the pretty light-coloured Lælia purpurata Miss Little.

R. I. Measures, Esq., Camberwell (gr. Mr. Smith), staged a very interesting group, which received a Silver Banksian Medal. It contained two well-bloomed specimens of Cymbidium × Lowgrinum, Cattleya Lawrenceana and Schilleriana, Angræcum Leonis and sesquipedale, Phaius × Norman, Masdevallia × Ajax, Cypripedium × gemmiferum, C. × W. R. Lee, and several other good things.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a fine group, containing some good Odontoglossums, Cattleyas, Dendrobium Wardianum, &c., noteworthy things being a very fine Odontoglossum ×

excellens, a large-flowered O × mulus, Lycaste costata, profusely flowered, Cypripedium × Chapmanii, and others. A First-class Certificate was given to Odontoglossum × Prince Edward of Wales (× Rolfeæ × Harryanocrispum), a very large and handsome hybrid, bearing a spike of twelve flowers, heavily barred with reddish purple on a white ground, and the base of the lip yellow; and an Award of Merit to Dendrobium chryseum giganteum, with very large golden yellow flowers.

Messrs. James Veitch & Sons, Chelsea, received a Silver Flora Medal for a fine group, containing a lot of good Odontoglossum crispum, O. Pescatorei, O. triumphans, O. × Adrianæ, O. × ardentissimum Lamus, Oncidium sarcodes, Marshallianum, and concolor, Lælia cinnabarina, Cypripedium niveum, Lælio-cattleya × Antigone, L.-c. Ithone (purpurata × Latona), most like the former in colour, but much smaller, and having some buff in the ground colour, &c. The pretty blush-pink Dendrobium Wilsoni received a Botanical Certificate.

Messrs. J. Cypher & Sons, Cheltenham, received a Silver Flora Medal for a brilliant group, containing a lot of good Lælia purpurata, Miltonia vexillaria, Oncidium concolor, and Odontoglossums, including the charming O. nævium, Leptotes bicolor, profusely flowered, Renanthera Imschootiana, Maxillaria Turneri, Lælia Jongheana, Epiphronitis Veitchii, Masdevallia × Measuresiana, M. caudata, and M. × Shuttryana Chamberlainii, Cypripedium callosum Sanderæ, &c.

Messrs. J. W. Moore, Ltd., Rawdon, received a Silver Banksian Medal for a very interesting group, containing Angræcum Leonis, Cattleya citrina, Phalænopsis Lueddemanniana, Gongora galeata, Dendrobium aureum, a brightly-coloured Zygocolax, Odontoglossum × Andersonianum, O × A. hebraicum, Bulbophyllum triste, and various well-known things.

M. Maurice Mertens, Mont-St.-Amand, Ghent, sent Cattleya Schrœderæ, fine examples of Odontoglossum × excellens and O. × Wilckeanum, a remarkable O. × ardentissimum with an enormous violet-purple blotch on each segment, leaving a broad white margin, another fine unnamed hybrid, and a good blotched O. crispum.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on March 21st, when there was a very bright display, and the awards consisted of four Medals, three First-class Certificates, and ten Awards of Merit.

The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. Ashton, Cowan, Cypher, Keeling, Leemann, Parker, Sander, Shill, P. Smith, Thorp, Upjohn, Walmsley, Warburton, and Williamson.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), received a Silver-gilt

Medal for a fine group, First-class Certificates for Odontoglossum × Lambeauianum Franz Masereel and O. × L. augustum, and Awards of Merit for O. crispum Orion and O. c. Bertie.

W. Thompson, Esq., Stone (gr. Mr. Stevens), received a Silver-gilt Medal for a fine group, and Awards of Merit for Odontoglossum crispum grandiflorum and O. × Rolfeæ var. Empress Marie.

Messrs. Charlesworth and Co., Bradford, received a Silver Medal for a good group, a First-class Certificate for Cattleya × Empress Frederick, and Awards of Merit for Odontoglossum amabile purpurascens, O. × Cremona, and O. × warnhamense var. Ebor.

Messrs. J. Cypher & Sons, Cheltenham, received a Silver-gilt Medal for a fine group and an Award of Merit for Lælio-cattleya Baroness Schröder.

Messrs. Hugh Low and Co., Enfield, received an Award of Merit for Odontoglossum crispum Arthurianum.

Messrs. J. W. Moore, Ltd., Rawdon, received an Award of Merit for Odontoglossum × Wilckeanum var. Urania.

Mr. W. Bolton, Wilderspool, also contributed a small group of plants.

The meeting held on April 4th proved to be one of the most successful since the Society was formed, there being a magnificent display, and the awards consisted of five medals, three First-class Certificates, eight Awards of Merit, and one Cultural Certificate.

The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. Ashton, R. Ashworth, Cowan, Duckworth, Keeling, Leemann, Parker, Sander, H. H. Smith, P. Smith, Stevens, Walmsley, Williamson, and Weathers (hon. sec.).

W. Thompson, Esq., Stone (gr. Mr. Stevens), received a Silver Medal for a fine group, containing some specially good plants of Oncidium concolor, a First-class Certificate for Miltonia × Bleuana var. Stevensii, and Awards of Merit for Odontoglossum Cervantesii decorum, Thompson's var., and O. × exultans var. Minerva.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), received a Silver Medal for a fine group, and a First-class Certificate for Odontoglossum × crispo-Harryanum × ardentissimum (a form of O. × venustulum).

Mrs. Ardern, Stockport (gr. Mr. Norris), received a Cultural Certificate for a splendidly-grown plant of Odontoglossum triumphans latisepalum.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), again sent the handsome Lycaste × Tunstillii.

Messrs. Armstrong & Brown, Tunbridge Wells, received a Silver-gilt Medal for a magnificent group of Dendrobium nobile virginale, raised true from seed, but showing much variation in form, and Awards of Merit for D. nobile virginale magnificum and Odontoglossum × orphanum.

Messrs. Charlesworth & Co., Heaton, received Awards of Merit for Odontoglossum × amabile var. Graireanum, O. × Ossultoni var. purpurascens, and O. × Sylvia (Rolfeæ × cirrhosum).

Messrs. Linden, Brussels, received a First-class Certificate for Odontoglossum crispum Roi d'Angleterre.

Messrs. Keeling & Sons, Bradford, received a Bronze Medal for a good group, and an Award of Merit for Odontoglossum Rossii magnificum.

Messrs. J. W. Moore, Rawdon, also received a Bronze Medal for a good miscellaneous group.

AT the meeting held on April 18th there was again a very brilliant display, and the awards consisted of one Gold and five other Medals, five First-class Certificates, and twenty-one Awards of Merit.

The Committee was represented as follows:—E. Ashworth, Esq., Chairman, and Messrs. Ashton, R. Ashworth, Cypher, Keeling, Parker, Rogers, Sander, Shill, P. Smith, Stevens, Thompson, Thorp, Walmsley, Warburton, Ward, Williamson, and Weathers (hon. sec.).

W. Thompson, Esq., Stone, received a Gold Medal for a very brilliant group, First-class Certificates for Cypripedium × W. Stevens and Odontoglossum × hybridum Thompsoniæ, and Awards of Merit for O. × bellatulum grandiflorum, O. crispum Louisa Elizabeth, O. c. Rupert, O. c. virginale, O. × Elaine superbum, O. × Lambeauianum rubrum, O. × Ossultoni nigrum, Cymbidium × I'Ansoni, C. insigne, Cypripedium × bingleyense, Walton var., and Miltonia × Hyeana.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), received a Silver-gilt Medal for a very fine group, a First-class Certificate for Odontoglossum × Lambeauianum var. Warburtonianum, and Awards of Merit for O. × L. leucoglossum, O. × L. purpurascens, O. crispum Kathleen, O. c. Victor, O. c. Yellow Queen, Cattleya Schrœderæ bella, and C. S. Flora Marguerite.

Z. A. Ward, Esq., Northenden, received a Silver Medal for a fine group, a First-class Certificate for Odontoglossum × Wilckeanum, Ward's var., and an Award of Merit for O. × Adrianæ, Ward's var.

R. le Doux, Esq., Liverpool (gr. Mr. Davenport), received a Silver Medal for a fine group.

W. Bolton, Esq., Wilderspool (gr. Mr. Cain), received a Bronze Medal for an interesting group.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), received an Award of Merit for Cypripedium × aureum, Oakdale var.

Messrs. Charlesworth & Co., Heaton, received a Silver Medal for a fine group.

Messrs. Sander & Sons, St. Albans, received a First-class Certificate for Cymbidium Sanderæ.

ODONTOGLOSSUM × ARMAINVILLIERENSE.

IN his paper on Hybrid Odontoglossums (*Journ. R. H. S.*, Genetics, p. 240) Mr. Crawshay remarks as follows:—

"In 1899 M. Jacob for Baron E. de Rothschild at Armainvilliers, Paris, raised a hybrid between crispum and nobile (*O.R.* vol. vii. 1899, p. 65) which was apparently lost, for I have never met anyone who has seen it. It has not been shown in England, nor do I know anyone who has ever seen a bloom. Records in those early days were kept so carelessly that it almost now seems a myth, and this hybrid is so well known under the name of ardentissimum that it seems futile to adhere in this case to priority of name: for it almost appears to be a name only, owing to absence of records or exhibition. The reference given does not mention any spotting, and states that the flower was most like nobile."

In view of this remark it seems desirable to give a translation of the original record (*Journ. Soc. Nat. Hort. France*, 1898, p. 1240). At the meeting of the Société Nationale d'Horticulture de France held on December 22nd, 1898, was exhibited "by M. Jacob, head gardener to Baron Edmond de Rothschild, of Armainvilliers (Seine et Marne), a new Odontoglossum hybrid, under the name O. armainvillierense, obtained from O. Pescatorei crossed with O. crispum. Plant superb, having flowers of perfect form, with very dark spots. It was awarded a First-class Certificate of Merit, with congratulations."

This does not read at all like a myth, and as it was in this self-same collection that the first-raised artificial hybrid Odontoglossum flowered, namely O. × Leroyanum (afterwards altered to O. × Wilckeanum var. Leroyanum), we feel justified in retaining the original name. Mr. Crawshay cites "O. ardentissimum, *O.R.*, 1902, 209." It there appears as O. × armainvillierense var. ardentissimum, and on the following page is the record of exhibition, certificate, and spotting. We hope some of our French readers can throw further light on the question, as it seems unlikely that such a plant has been completely lost.

WOODLICE.

IT may interest some of your readers to know that Keating's Powder has a most deadly effect on woodlice. I have had a perfect plague of them in my Odontoglossums lately, and after trying various remedies, I puffed a small quantity of the powder among the crocks, through the holes in the pots, with the most satisfactory results.

I have taken in the *Review* from the beginning.

ARTHUR S. NIX.

Mount Charles, Truro.

LÆLIO-CATTLEYA SCHILLERIANA AND ITS PARENTS.

THE annexed figures represent the beautiful Lælio-cattleya Schilleriana with its two parents, Lælia purpurata and Cattleya intermedia, and are

Fig. 18. LÆLIA PURPURATA. Fig. 19. CATTLEYA INTERMEDIA.
Fig. 20. LÆLIO-CATTLEYA SCHILLERIANA.

reproduced from a photograph kindly sent by Dr. A. W. Hoisholt. Stockton, California. Dr. Hoisholt writes :—"For some time I have tried to get a picture of the group, but not until the past season have I found them in bloom at the same time. I think the photograph shows the

characteristics of the parents and hybrids so well that the different flowers can be identified at a glance."

LÆLIO-CATTLEYA SCHILLERIANA (fig. 20) is a very old inhabitant of our gardens, having appeared in the collection of Consul Schiller, of Hamburg, as long ago as 1855, when it was thought to be a species, and was described by Reichenbach under the name of Lælia Schilleriana. Other forms subsequently appeared and were described, when the opinion was expressed that they were natural hybrids, a view which has since been confirmed, for it has now been raised artificially three times, by Messrs. Charlesworth, Messrs. Cappe, and by J. H. Grogan, Esq., as recorded in these pages. Its history and synonymy have also been given (*O.R.* i. pp. 237, 238). It is found in the Santa Catherina district, S. Brazil, with its two parents.

CATTLEYA INTERMEDIA (fig. 19) is a free-flowering and popular garden plant, which was originally introduced as long ago as 1824. The pure white varieties are highly prized at the present time, also the remarkable peloriate variety Aquinii, which is mentioned on page 150, and which has been figured in our pages (*O.R.* viii. p. 73).

LÆLIA PURPURATA (fig. 18) is one of our most popular garden plants, and presents a considerable range of variation in colour. It was introduced to cultivation in 1847, and originally described by Lindley about two years later (*Paxt. Fl. Gard.* iii. t. 96).

THE HYBRIDIST.

LÆLIO-CATTLEYA URSULA.—A pretty little hybrid raised by E. F. Clark, Esq., Chamonix, Teignmouth, from Lælia crispa ♀ and L.-c. exbelliensis ♂, the latter being a form of the natural hybrid L.-c. Leeana (L. Loddigesii × L. pumila). The cross was made in September, 1898, and the seed sown the following April, seedlings being observed three months later. Mr. Clark remarks that it is the first Lælio-cattleya of his own raising to flower, and that the plant, though eight years old when the first flower appeared, is still dwarf, being no bigger than a fair sized L. pumila. The flower is 4¼ inches in diameter, and the petals 1¼ inches broad, and somewhat crisped, while the lip is distinctly three-lobed, and strongly crisped in front. The sepals and petals are lilac-mauve, the side lobes of the lip white, and the front lobe intense purple-crimson, with a narrow white margin, while a broad purple line extends down the light yellow disc, from which radiate short purple lines on either side. It should develop into a very pretty thing when the plant becomes strong. The flower is most like the L. crispa parent, except as to the colour of the sepals and petals. Mr. Clark has five seedlings, two having longer stems, showing more of the C. Loddigesii character, and these may prove somewhat different in the flower.

ODONTOGLOSSUM × IAGO.—A very interesting hybrid raised by De Barri Crawshay, Esq., Rosefield, Sevenoaks, from O. Harryanum ♀ × Hunnewellianum ♂. It is fairly intermediate in size and shape, and the greater part of the area of the sepals is covered with large dark purple-brown blotches, while the petals bear numerous smaller blotches. The lip has much of the Harryanum character, and is white in front, and densely spotted with violet-purple behind, the crest being spiny and deep yellow. The seed was sown in 1900, and the plant has now produced a first spike of ten flowers.

ODONTOGLOSSUM × TIGRINUM.—A very attractive hybrid from O. Harryanum ♀ × Fascinator ♂, raised in the collection of R. G. Thwaites, Esq., of Streatham. It is most comparable to O. × Othello, but shows more of the crispum influence, as might be expected from the fact that that species has been twice concerned in the parentage. The ground colour is yellow, heavily blotched with deep red brown, and the lip light yellow, much spotted with violet-purple on the basal half. It is a very young plant, and has now produced a spike of four flowers.

ODONTOGLOSSUM × ERNESTII.—Another interesting hybrid raised in the same collection as the preceding, from O. triumphans ♀ × Adrianæ ♂. It is most like the former in shape, and has light yellow flowers, slightly suffused with rose towards the margin of the segments, each of which bears a few bright brown spots, those on the petals being rather smaller. The lip is light-yellow with a few spots, and the column wings large and nearly entire. Messrs. Charlesworth exhibited a seedling of the same parentage last year (*O.R.* xiv. p. 85).

ORCHIDS IN SEASON.

SOPHROLÆLIA Phroso superba is a very brilliant hybrid from the collection of Major G. L. Holford, Westonbirt, Tetbury, which received a First-class Certificate from the R.H.S. on April 16th last. The parentage is Lælia Jongheana ♀ × Sophrolælia læta Orpetiana ♂, and this is the second of the batch which has bloomed, the first, which gained an Award of Merit, being noted at page 247 of our last volume. The present form is considerably larger, the flower measuring four inches across, and the colour is very deep rose-purple, with a deep yellow throat and keels, in which the influence of the seed parent is seen. Mr. Alexander, in sending the flower, remarks that we shall undoubtedly get some beautiful things among these secondary crosses of Sophronitis.

A curious little hybrid from Lælia harpophylla × Cattleya Trianæ alba is sent from the collection of E. F. Clark, Esq., Chamonix, Teignmouth. It is most like the former in shape, but is greatly enlarged, and the colour is light buff-yellow throughout, there being no trace of purple on the front

of the strongly three-lobed lip. It came originally as a very small seedling from the Highfield collection.

Some beautiful flowers are sent from the collection of H. S. Goodson, Esq., Fairlawn, West Hill, Putney, by Mr. Day. Odontoglossum × Lawrenceanum is a fine yellow hybrid, very heavily blotched with deep chestnut brown. O. × ardentissimum var. Herbert Goodson is a superb form which received a First-class Certificate from the R.H.S. on April 10th. The sepals are slightly suffused with rose and heavily barred with rich claret-purple, and the petals, which are as much as 1¼ inches broad, very heavily and regularly blotched with the same colour. O. × a. Lamus is of average shape, and has lighter-coloured blotches regularly disposed on a white ground. Cattleya intermedia nivea is a charming albino of the species, C. i. carnea has the front lobe suffused with light pink, while a third is about intermediate between this and the type, which is also sent, and has the front lobe bright rose-purple.

A beautiful four-flowered inflorescence of Lælio-cattleya Frederick Boyle var. Kerchoveæ is sent from the collection of J. Leemann, Esq., Heaton Mersey, by Mr. Smith. It was derived from a white form of L. anceps crossed with Cattleya Trianæ alba, and has white flowers with a yellow disc to the lip.

Flowers of a large and very richly-coloured form of Dendrobium nobile, closely resembling D. n. nobilius, are sent from the collection of G. A. Marshall, Esq., of Streatham, through Messrs. Hugh Low and Co., also a beautiful white form with coloured lip much like D. n. Amesiæ. They were obtained from Messrs. Low's importations. The former is from a fine plant, bearing about 150 flowers.

NOTES.

THE next meeting of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on May 14th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Society's great annual show will be held at the Inner Temple Gardens on Tuesday, Wednesday, and Thursday, May 28th, 29th, and 30th. The Orchid Committee will meet at 11 a.m., and the exhibition opens to Fellows at 12.30 p.m. Class I. is devoted to Orchids, and silver cups and medals will be awarded according to merit. The Veitchian Cup for 1907 is offered to amateurs at the Temple Show. It is intended to mark the greatest advance in horticulture—either a single plant, group, or series of groups in any class.

A group of Deciduous Dendrobiums at Oakwood is figured in the *Gardeners' Magazine* for April 27th (p. 289). Mr. Chapman insists on the

importance of annual propagation to keep up a stock of young, vigorous plants.

We regret to learn that the fine collection of Orchids brought together by the late Sir Frederick Wigan, Bart., at Clare Lawn, East Sheen, is to be sold, and that Mr. W. H. Young, who has had the charge of it for over seventeen years (not seven, as inadvertently stated at page 112) will in consequence be seeking a new situation. We hope that he will soon meet with a post in which his well-known abilities will be suitably rewarded. Another unfortunate slip must be corrected. Sir Frederick Wigan was in his seventy-ninth year, not eighty-second, as stated.

ORCHID PORTRAITS.

ANGRÆCUM HUMBLOTII.—*Journ. Hort.*, 1907, i. p. 317, with fig.

COELOGYNE CRISTATA.—*Garden*, 1907, i. p. 206, with fig.

CYMBIDIUM ERYTHROSTYLUM, Rolfe.—*Bot. Mag.*, t. 8131.

LELIO-CATTLEYA BARONESS SCHRÖDER, WESTONBIRT VAR.—*Gard. Mag.*, 1907, pp. 239, 240, with fig.

LELIO-CATTLEYA DOMINIANA LANGLEYENSIS.—*Journ. Hort.*, 1907, i. p. 363, with fig.

LELIO-CATTLEYA FASCINATOR SPLENDENS.—*Gard. Mag.*, 1907, pp. 230, 231, with fig.

ODONTOGLOSSUM CRISPUM ROI D'ANGLETERRE.—*Gard. Mag.*, 1907, p. 247, with fig.

ODONTOGLOSSUM CRISPUM ROSEMARY.—*Gard. Chron.*, 1907, i. p. 217, fig. 97; *Journ. Hort.*, 1907, i. p. 339, with fig.

ONCIDIUM AMPLIATUM MAJUS.—*Journ. Hort.*, 1907, i. p. 295, with fig.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work*].

E.R.—Paphiopedilum × Charles Richman in all its forms is more or less spotted, so that the seedling you send, which is almost uniformly suffused with purple, can scarcely be from P. barbatum × bellatulum, and may be a stray from another cross. We do not recognise it. Is there not some P. × Harrisianum in it?

G.A.M.—There are other forms of Dendrobium nobile now in cultivation as large if not larger and as richly coloured as D. n. nobilius, but if grown side by side with it would probably show some small differences. D. n. nobilius stood out clear and distinct on its original appearance, but the enormous importations of recent years have produced several very similar forms, though the true form may be said to have been all propagated from the original plant.

Several notes are unavoidably postponed owing to pressure on our space.

ERRATUM.—The hybrid between Cymbidium eburneum and C. Tracyanum mentioned at page 102 as C. × Holfordianum should have been C. × Wiganianum. The other is a hybrid between C. eburneum and C. grandiflorum.

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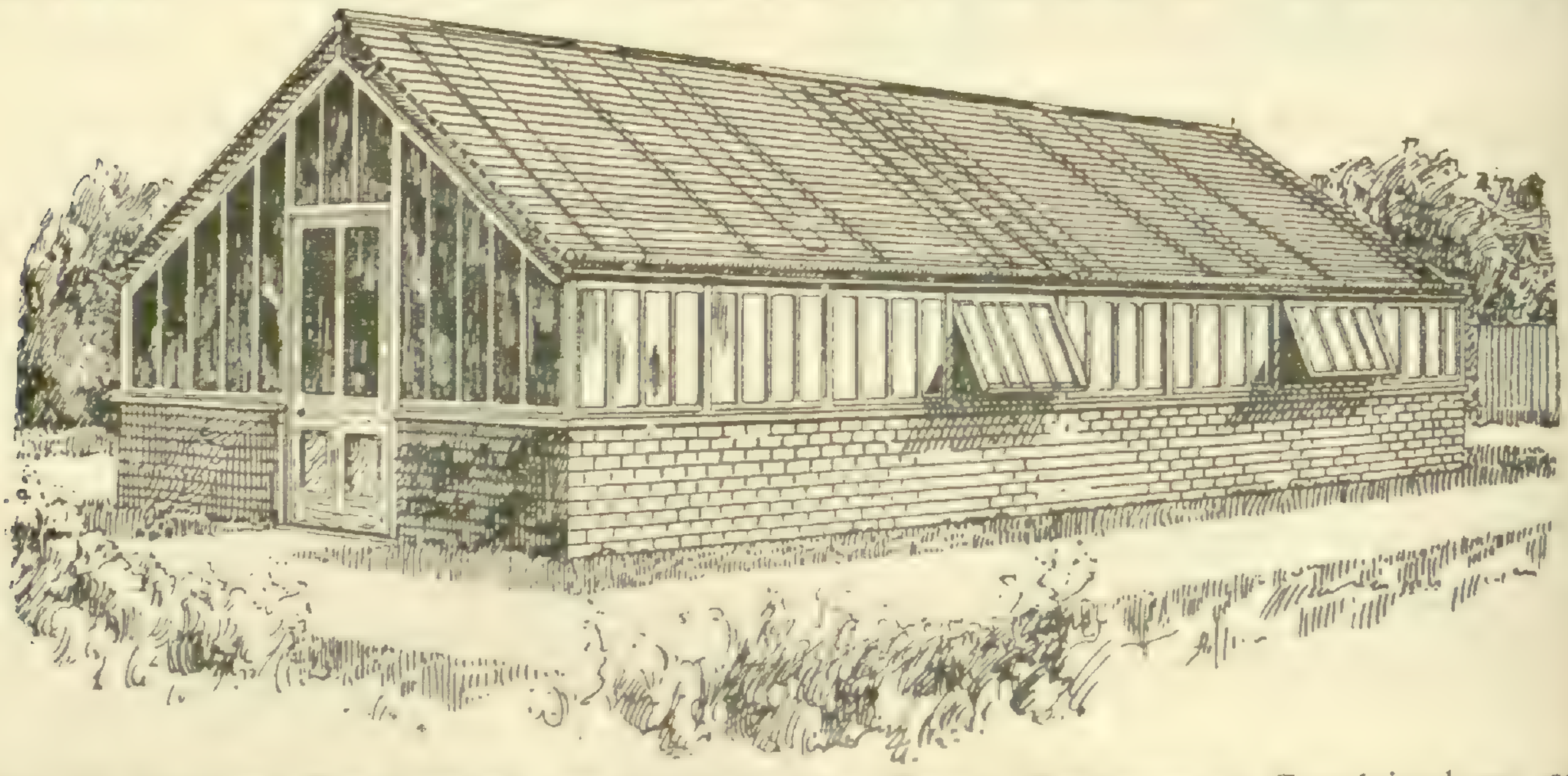

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THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *JUNE*, 1907. [No. 174.

ORCHIDS AT OAKWOOD, WYLAM-ON-TYNE.

ORCHIDS from the fine collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, are familiar to many readers of the *Orchid Review* from the choice exhibits which appear from time to time at the various meetings of the R.H.S., and a few notes on the collection itself, which the writer has just had the pleasure of seeing, will probably be interesting.

There are three houses devoted to Odontoglossums, two facing north, and one span-roofed house. The latter has been specially constructed for growing the choice varieties during the winter months. They have just been removed to one of the north houses for the summer season. Here we saw a very fine display of bloom. We must particularly note a magnificent example of O. crispum Leonard Perfect, which has been divided twice since the last Temple Show, and is now producing flowers equal in size and finer in colour than before. The same remarks apply to the beautiful O. c. Fearnley Sander, which has also been twice divided during the same period. In this, the centre of the flower is crimson-purple, shading to violet-purple at the margin. The apices of the sepals and petals are suffused with violet-purple, reflected from the back. The lip is white, with a large yellow disc and a bright brown blotch covering the central area, and numerous smaller ones about the crest. O. c. Marie, O. c. Abner Hassall, and the shapely O. c. xanthotes Cooksoniæ were making a fine show. The earliest of Mr. Chapman's home-raised Odontoglossums, O. × ardentissimum, is now flowering for the first time. In this house alone there are upwards of 250 noteworthy plants, including a large number of distinct varieties of O. crispum. We also saw, temporarily placed in this house, some Phaius, P. × oakwoodiensis, P. × Phœbe, P. × P. superbus, and P. × Cooksoniæ.

In the other north house we saw O. crispum Sanderæ just bursting into flower. This is one of the rarest and most beautiful of crispums. It is remarkable how this plant has developed, under the vigorous method of treatment adopted. We saw paintings made by Miss Roberts of this plant when it flowered in 1902, 1904, and 1906. In 1902 the colour was practically broken on all the segments, and the flower about half the size of

those produced in the later years. In the last two flowerings the blotches have gradually become united, until each of the segments has become a solid mass for more than two thirds of its area, while the tracing of colour indicates a probability of further development in this respect. The colour is almost crimson-purple, the white marblings being suffused with violet-purple. O. c. Britannia, considered to be one of the most beautiful in the collection, will shortly be in flower. There were also numberless interesting seedling Odontoglossums, with some Odontiodas. We were particularly struck by the healthy and vigorous appearance of all the Odontoglossums, in fact, here they seem to grow like weeds.

Among many seedlings we may note a few interesting crosses. Odontoglossum crispum Cooksonianum × O. c. Cooksoniæ, O. c. Mundyanum × O. c. Chapmanii, O. c. Graireanum × O. c. Prince Leopold, O. Pescatorei Charlesworthii × O. crispum Graireanum, and Cochlioda Nœtzliana × O. crispum Graireanum are all doing well. There were, in fact, seedlings of all the best crispums intercrossed, both here and in the Odontoglossum houses. Mr. Cookson has not been afraid to use his best forms to carry seed on. C. × Dom Carlos Rex (Godefroyæ leucochilum × Lawrenceanum) is just showing flower, as also are numerous hybrids, due to the intercrossing of various sections of albinos.

One house is devoted to Phaius and Cypripediums. The P. simulans section is represented in all the known varieties. They do remarkably well here. The plants are often used for decorative purposes in the house, for as much as six weeks at a time. The P. Humblotii section, represented by P. × Cooksoniæ, P. × oakwoodiensis, P. × Phœbe and P. × P. superbus, are just expanding their flowers.

Phaius Humblotii itself is also coming into bloom. We also noted P. × Ruby, P. × Chapmanii superbus, and others, as yet unnamed, and flowering for the first time. An interesting secondary cross is between P. × Norman and P. Blumei. This had reverted almost to Blumei, having the sepals and petals of the latter. As in P. × Norman, there is remarkable variation in plants from the same seed pod. The temperature of this house is practically intermediate. There are also included the winter-flowering section of Cypripediums, represented by large specimen plants of most of the best-known kinds, hybrid and species, C. Fairrieanum and its hybrids being fully represented. We saw magnificent plants of most of the well-known hybrids that have originated here.

The Dendrobium house includes the best-known species, while the hybrids represented are chiefly those that have been raised in the collection.

The Calanthe house contains a fine collection of this genus. These are now grown without the usual disfiguring spot, and many which were at one time considered the most difficult to cultivate are now proving most

tractable. We noted C. × Oakwood Ruby, and C. × Chapmanii, two of the finest dark forms known, and the pure white C. × Sibyl. Other hybrids give promise of satisfactory results, judging by the growths they are developing.

Two divisions are devoted to Cattleyas. In the collection are included many of the noted species, both type and albino forms. There are a large number of hybrids, including many home raised.

One house is devoted entirely to seedlings, with the exception that the choice Cypripediums occupy a portion of one side. We noted C. bellatulum, C. niveum and the hybrids of this section growing in a manner that is seldom seen. The seedlings represent various genera, but principally consist of some thousands of the Cattleya tribe, with interesting crosses of Cypripediums. Cypripedium × F. K. Sander (× Annie Measures × bellatulum), now in flower, is undoubtedly the finest of all the bellatulum crosses. The bold dorsal sepal and broad drooping petals, with its remarkably even spotting, render it unique.

Phaius simulans is growing on the stage in the seedling house in a most remarkable manner. Here the growths and foliage roam in the shade of the overhanging Cypripedium leaves, and these conditions evidently satisfy the requirements of the plant. A few years ago, although growing in the same house, these plants were practically leafless, and with little indication of robust health ever returning. The altered conditions have worked wonders.

In the Stove house we saw Selenipediums well represented. Brassavolas do well here. Cœlogyne Dayana was also growing splendidly. It is worthy of note that Mr. Chapman finds Dendrobium Phalænopsis to grow better in the shade under the usual conditions of an ordinary plant stove than in the division devoted to Dendrobiums.

In the grounds we saw Cypripedium pubescens, C. spectabile, and C. Calceolus growing among the ordinary English wild plants by the side of the pond. In dry weather, these are flooded from the pond, and thus do not suffer from the drought. All the plants were flourishing, but of course not yet in flower.

We were much pleased with the clean and healthy condition of the plants and with their vigour, and in connection with the latter Mr. Chapman emphasized the necessity of keeping up a young and vigorous stock by constant division, a proportion of the plants being divided annually, when in suitable condition. Evidence of progress was everywhere apparent, and we must congratulate Mr. Cookson and his able gardener, Mr. Chapman, on the excellence of the collection generally. A note on the cultural methods adopted was given at pp. 177, 178 of the twelfth volume of this work, accompanied by a figure of a group of choice Odontoglossums in the collection.

R. T. R.

CALENDAR OF OPERATIONS FOR JUNE.

By W. P. BOUND, Gatton Park, Reigate.

TREATMENT OF ORCHIDS FOR EXHIBITION.—Those of us who exhibit Orchids more or less all the year round know too well the evil effects on the plants, but with some preparation beforehand, and careful treatment after their return to the houses, much can be done towards reducing the mischief. It often happens that the plants being shown are out of the houses for five or six days, and in some cases during most of that time they have only the protection that a canvas structure affords. There must of necessity be entrances, and plants that in a general way at home are treated so that no direct air is allowed to play upon them have to put up with cold draughts and any weather that may come along, so that unless the plants have been in some degree hardened and prepared, disaster will frequently follow.

All plants that are grown in warm structures should be removed a few days before hand to cooler and more airy houses, and they should be kept well on the dry side before being packed, and allowed to remain so during the time they are at the exhibition. My experience has taught me that plants that have been well dry from the time they were removed from the houses till their return are the ones that suffer least, but it is not so important with such plants as Cymbidiums, Odontoglossums, and other cool-grown varieties, as it is with Cattleyas, Lælias, Phalænopsis, etc., but in all cases the least harm accrues when they are on the dry side.

When the plants get home all flowers should be removed, and for a few days no water should be given them. The harmful effects of exhibiting are not often apparent at first, and I think the foliage never suffers to the same extent as the roots. One may think when the Show is over that the plants are none the worse, but when the new growth starts away a great difference can often be seen, and this is generally caused by the plant being in a somewhat wet state, and the roots getting chilled during the time the plants were out of the houses. A plant may shrivel by being kept so dry, but that is a much less evil than losing the roots, and I am sure that when well dry the roots will come safely through such a time, when if they had been in a wet state they would ultimately have rotted. With all precaution harm must accrue, and the only thing one can do is to lessen the amount, and always be prepared for any emergency.

ONCIDIUMS macranthum, serratum, undulatum, monachicum, superbiens, and zebrinum will now be in flower, more or less. Some will be over, and plants that are not flowering this year will be forward enough in growth to enable potting to be done. By reason of the very long season the spikes remain on the plants ; it is most essential that the plants should

be in robust health, and that the compost is in good condition before allowing them to carry spikes. Poor spikes are not worth attention, and when a plant is not in first-rate condition the strain of flowering makes it a complete wreck, while the flowers are of very inferior quality.

The practice I advise, when plants are exhausted, is to reduce them to as small pots as possible, removing any back bulbs, and bringing the base of the leading growth down to the level of the surface material. Then the plants can be potted on afterwards without much disturbance, and gain strength, and when that is attained they will be in the right state to carry a good spike, that will produce flowers of good quality. In the case of O. zebrinum I know it is not possible to bring the leading growth quite to the surface material, but get it as near as possible. I have proved that the others suffer much less from the strain of flowering when the pseudobulb carrying the spike is close to the surface material.

A good compost for them consists of equal parts of fibrous peat and chopped sphagnum, with some small crocks and sand added. A drainage of rhizomes over a few crocks should be given, the amount being determined by the condition of the plant. Weak plants should be potted lightly, to enable the roots to enter easily and ramify among the material. Those that are being potted on when well rooted, and strong enough to carry a spike, should be potted rather firmer. Newly-potted plants will not require much water for some time, but as the growth and roots develop the amount may be considerably increased.

They revel in abundance of fresh air, and the pseudobulbs made where they get fresh air freely are much harder in substance, a very important point in their culture. The position afforded at Gatton is the top of the centre stage in the Odontoglossum house, just under the centre continuous ventilator, where they get the direct top air, and of course a great portion of that from the bottom ventilators.

Frequent overhead syringing is very helpful during bright weather. O. monachicum and O. undulatum are now over with us, but the beautiful O. macranthum furnishes a great attraction to the Odontoglossum house after the bulk of the O. crispums are over. They are all worthy of the best attention, and if the plants are at all distressed with the strain of flowering it is advisable to remove the spike quickly. Soon after the spikes are removed the plants will be ready for repotting, and unless the plants are exceptionally vigorous it is not good policy to flower them two years in succession. If they are well potted now, and the back bulbs removed, they will be ready to push a spike next year, and flower in 1909.

The spikes and flower during the spring and summer of 1908 will soon be in evidence, so it should be decided quickly which plants shall flower then, and remove the spikes from the others immediately they appear.

DIACRIUM BICORNUTUM.—This beautiful Orchid has now passed out of flower, and the young growths will soon start away, when potting and rejuvenating should be taken in hand. A compost of peat and moss in equal parts, with some sand and small crocks should be used, and a drainage of quite half the depth of the pot should be given. We have had fair success with it, which we attribute to constant propagation. When the young growth is about one inch high cut it off, with the last made pseudobulb, and pot it up in as small a pot as possible. The old plant should then be left undisturbed, when a new lead will be quickly made, and then new material for the roots to enter will be helpful.

The position given should be in a house that is teeming with moisture, and where the temperature does not fall below 70°, except during severe weather. They require much shade, and when growing freely it is essential that they do not suffer from want of water, though if the house is as humid as it should be they will not dry quickly. After potting, water should be supplied very sparingly. Although I consider my success due to propagation, yet the right house is a very important item. Diacrium bilamellatum is a very pleasing variety, but it is not equal in beauty to D. bicornutum. They flower at the same time with us, and one thing in favour of D. bilamellatum is that it is a better grower. Both require the same treatment.

PACHYSTOMA THOMSONIANA is now fast developing its new pseudobulbs in the warmest part of the Cattleya house, and will need copious supplies of water until the flowering season is over. Overhead sprayings will also be extremely helpful. Watch carefully for any signs of red spider, which will soon disfigure the leaves, if not destroyed.

THUNIAS.—Most of the early-flowering varieties will now have passed out of flower, and the plants should be gradually hardened off till they are placed in such a house as an early peach house, where they can enjoy unrestricted sunshine. They will still require copious supplies of water until the foliage shows signs of decay, when the supply must be reduced. They are often attacked with thrip when in such a house, often causing the foliage to decay prematurely. As it is not always desirable to fumigate such a house, dip them in XLall plant wash, or any other reliable insecticide. Full maturity cannot be attained if the foliage is lost before its time, and if maturity is not complete the best results cannot be obtained next season. As the later varieties pass out of flower treat them in the same way.

It is not advisable to treat propagated plants quite in this manner. Grow them on as long as possible to get strength in the new bulb; then about the middle of August place them in a somewhat cooler house, where they will have sufficient sunshine to assist the ripening, and when winter comes they can all be stored together.

CYMBIDIUMS.—The attractive and long-lasting C. Lowianum and the beautiful but rather more difficult C. eburneum, will now be over, likewise the many beautiful hybrid varieties from them, and potting may at once be taken in hand. My remarks in the February Calendar on Cymbidiums will be applicable to these.

C. Devonianum and C. Huttoni are varieties that are best suited when grown in the coolest part of the Intermediate house, and potted in a compost of two parts loam to one part each of peat and leaf soil, with some crocks and sand added. Give good drainage, and place them well up to the light. During active growth they require plenty of water, but keep them rather on the dry side during the dull days of winter.

C. insigne (Sanderi) is proving itself to be one of the finest of Orchids, and one which I feel sure will be quite as popular and as easy to cultivate as C. Lowianum. We have given ours the same compost as advised in the February Calendar, and they have a position in the Odontoglossum house, where they are growing very well. They seem to need copious supplies of water when growing freely; in fact we are treating ours in precisely the same way as such varieties as C. Lowianum and C. Tracyanum.

C. erythrostylum is another great acquisition, and one that will probably prove very useful to the hybridist, besides being a grand plant for the collection. This also seems to need ordinary Cymbidium treatment.

ANGULOAS.—A. eburnea and A. Clowesii will be ready for potting, and soon following them will be the rather late flowering A. Ruckeri and A. uniflora. Soon after the flowering season is past, or if they are not producing flowers just when the new growth is nicely started, is the season when potting should be done. They are heavy feeders, and soon exhaust the compost, so that it is well to pot them at least every other year: in fact I consider the best results are attained by repotting annually, in a compost of two parts good loam to one part each of peat and leaf soil, with some sand and small crocks. Fill the pots one-third of its depth with drainage, and place some rough material over to prevent the fine parts from working down. Pot moderately firmly, and keep the compost rather below the rim of the pot. They will not require much water for some time after potting, but frequent dampings between the pots will be helpful. As the growths develop the supply of water must be increased considerably, and an abundant supply should be given till the new pseudobulb is fully developed, when the supply may be considerably reduced, and very little will be needed during the resting season. A position in the Cool intermediate house will be very suitable, shading them from all strong sunshine during the growing season.

CŒLIA MACROSTACHYA.—As soon as the growths have made a good start is the season when potting or surface renewal should be done, using a compost of two parts good loam to one part each of peat and leaf soil. Give a fair drainage, and pot firmly. A position in the Cool intermediate house is very suitable. During active growth copious supplies of water should be given, and at no season should this species be allowed to remain in a dry condition. Perhaps this could scarcely be called a showy Orchid, yet when a good specimen is seen carrying many spikes, two feet or more in height, of its pretty rosy-red flowers, it has a beauty of its own, and is well worth its room.

CYPRIPEDIUM niveum, bellatulum, concolor, and Godefroyæ will now be passing out of flower, and should be overhauled, potting those that have become loose and those that have got in a sour state. Any that do not require potting will be benefited by having some of the surface material removed, and new added. Speaking generally these are difficult Orchids to keep in vigorous health. I believe most failures can be attributed to keeping them much too dry, and potting them in shallow pans in light material. Yet from time to time one meets with successes brought about by quite different means, so that what may be the correct way in a place that has a high elevation may be quite wrong in a low and damp situation. The compost used by us consists of two parts good loam, retaining all the fine particles, to one part peat, mixed with some sand and small crocks.

Ordinary pots, provided with holes for suspending, are preferable to pans, as they give greater depth; an important point, as the roots like to strike down. Before starting to pot have at hand a good supply of pieces of soft red brick, broken to about the size of walnuts and less. Place one or two pieces over the bottom, then let the roots go down as straight as possible, and build up around them with the pieces of brick and compost, the surface being finished off with the compost only. My experience has been that surfacing with sphagnum is very detrimental.

When potted thus water will have a very free passage; in fact we find it nearly impossible to get them too wet, but the important point is to see they never become dry.

We suspend ours in the Cattleya house, over the path, where they can be easily watered and syringed. I know it will seem strange to many to treat them in this way, and my advice to anyone who is now growing them successfully on some other principle is to stick to it, but to those who have found difficulty in maintaining them in health try a few at any rate on this system. When dealing with varieties that have always died after they have been in this country a few years, I am a strong believer in trying to find a new way of killing them, on the chance that we may learn how to grow them. It gets rather monotonous seeing them die the same way every time.

PAPHIOPEDILUM × LOUISE.

THE annexed figure represents the very handsome Paphiopedilum × Louise (P. Mastersianum ♀ × bellatulum ♂), the figure being reproduced from a photograph kindly sent by Sir Benjamin Scott, Linden House, Stanwix, Carlisle, together with a painting of the flower. It was purchased with a lot of other seedlings from Messrs. Sander about two years ago. The plant is said to have a very vigorous and robust habit, the leaves being about nine inches long by three inches broad, mottled with dark green and spotted with yellow. The scape is six inches high, and the flower measures

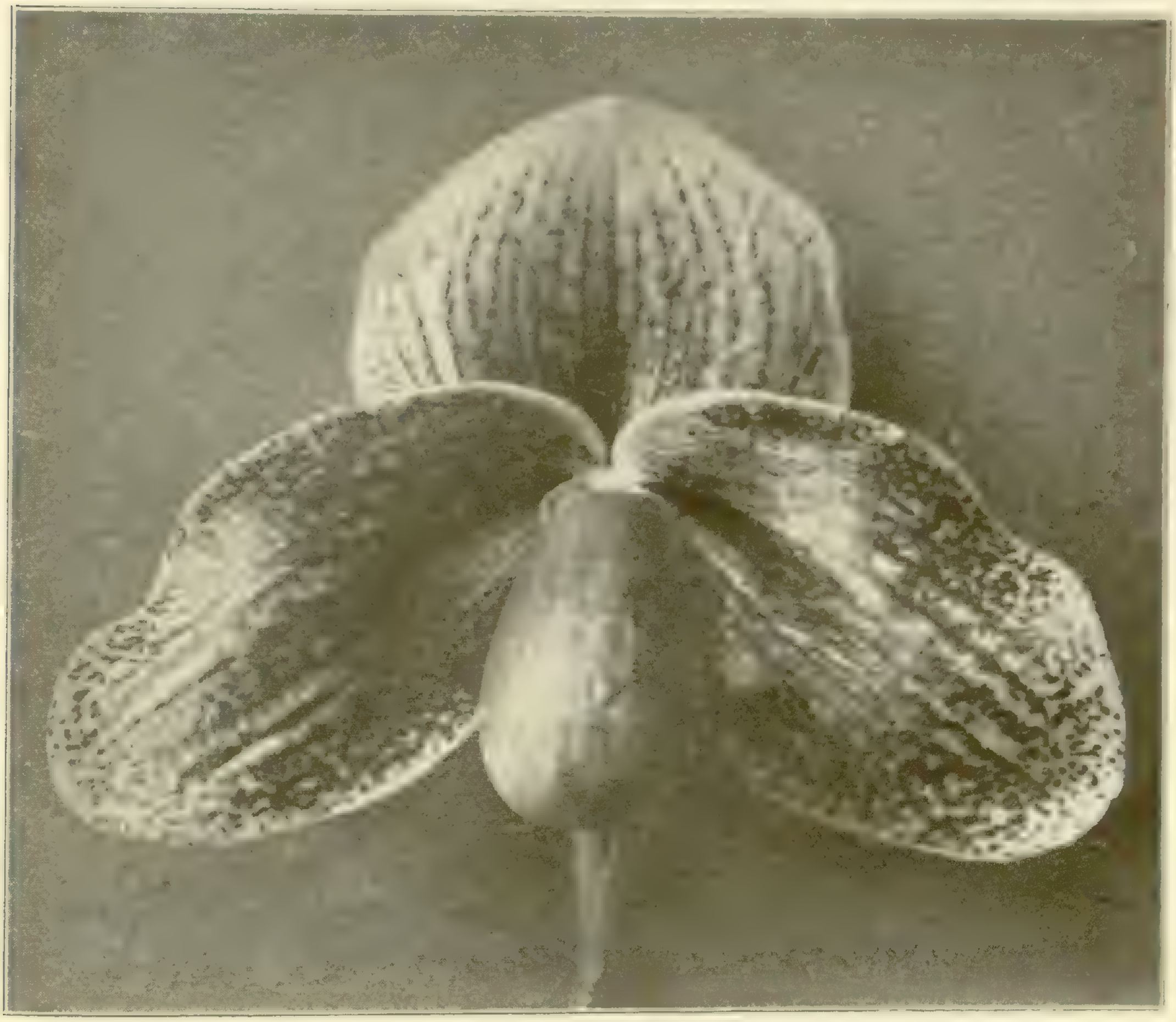

Fig. 21. PAPHIOPEDILUM × LOUISE.

five inches broad across the petals. As regards shape little need be said, but it will be seen that it is of excellent form, the dorsal sepal and petals being very broad. The ground colour is pale cream, densely dotted with red-purple, the dots on the dorsal sepal being chiefly arranged in lines, and not extending quite to the margin, while the lip and staminode are also suffused and somewhat dotted with similar colour. The sender remarks that the few judges who have seen it consider it exceptionally good, a view in which we fully concur, for it is excellent in shape and very richly

coloured. The name appeared in Messrs. Sander's *Orchid Guide*, p. 336, but we have not succeeded in finding any other record. It is a decided acquisition to the group.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of the R.H.S. was held at the Royal Horticultural Hall, Vincent Square, Westminster, on May 14th, when there was a very good display of Orchids. The awards consisted of seven Medals and two Awards of Merit.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), staged a choice group, to which a Silver-gilt Flora Medal was given. It contained a series of fine Odontoglossums, chief among them being O. crispum Leonard Perfect and O. c. Fearnley Sander, both in fine condition. Others were O. c. Abner Hassall, O. c. Mariæ, O. c. Whateleyæ, O. c. Peetersii, O. c. Moonlight, with blotched sepals and a cluster of purple spots on the middle of the petals, O. c. Eustace, O. c. Angela, and some unnamed spotted forms. The group also contained the beautiful Phaius × Norman, P. × Phœbe, P. × Harold, P. × oakwoodiensis, P. × Ruby, Cattleya Schrœderæ alba, and other showy things.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), received a Silver Flora Medal for a choice group of well-grown Odontoglossoms, including O. c. Crawshayanum, O. c. Trianæ, O. c. Raymond Crawshay, O. c. Mrs. de B. Crawshay, a beautiful white flushed with rose on the sepals, and others, also a fine O. × crispo-Harryanum, the pretty O. Rossii immaculatum, and O. × Urania (crispum × cristatellum), a pretty darkly-blotched hybrid, which was described at page 349 of our last volume.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for a pretty little group of about three dozen plants, prominent among them being Cymbidium × Lowgrinum and C. Lowianum, Phaius × Norman, Cattleya Mendelii and C. Lawrenceana. There were also the interesting Masdevallia O'Brieniana, M. xanthina, M. ignea, M. Houtteana, the rare and striking M. trinema, and others.

F. J. Hanbury, Esq., Stainforth House, Upper Clapton, received an Award of Merit for Oncidium leucochilum Mrs. F. J. Hanbury, having the sepals and petals almost uniformly dark purple-brown, contrasting effectively with the pure white lip. The spike was about four feet high, and bore fifteen branches with about 100 flowers.

F. M. Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), received an Award of Merit for Odontoglossum crispum xanthotes White

Lady, a very fine white, with a clear orange-yellow disc to the lip, and an occasional yellow spot on the sepals.

W. A. Bilney, Esq., Fir Grange, Weybridge (gr. Mr. Whitlock), sent Cattleya Mossiæ Mrs. W. A. Bilney, a large and handsome flower, with light rose sepals and petals, and a very richly-coloured lip.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent the handsome Odontoglossum × Ossultoni Glebeland's var. (× crispo-Harryanum × Pescatorei Charlesworthii), with white ground colour, blotched with violet purple, and a broad lip with some purple markings in front of the yellow crest.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), sent Lælio-cattleya Ganymede illustris (L. × Latona × C. Schrœderæ), differing from the one recorded at page 151 in having some purple lines on the base of the petals.

Messrs. Hugh Low & Co., Enfield, staged a very fine group, to which a Silver Flora Medal was awarded. It contained about sixty beautiful plants of Cattleya Mendelii, mostly with the lip rich purple in front, but a few blush-white, and one with some rosy veining on the petals, two very fine specimens of C. Skinneri, C. × Parthenia Prince of Wales, Lælia × Mozart, Lælio-cattleya Dominiana, and other good things.

Messrs. James Veitch & Sons, Chelsea, also received a Silver Flora Medal for a very fine group, containing some excellent forms of Cattleya Mendelii, Lælia × Latona, Brassolælia Digbyano-purpurata, Brasso-catlælia Veitchii, Masdevallia Veitchiana, some good Odontoglossums, including O. × ardentissimum Lamus, and other showy things. The centre of the group was occupied by an excellent specimen of Renanthera Imschootiana, bearing an inflorescence with nine branches and about 100 flowers, forming a brilliant sight.

Messrs. J. Cypher & Sons, Cheltenham, received a Silver Banksian Medal for a choice group, containing two magnificent deep rose forms of Miltonia vexillaria, and two other equally fine forms having a white lip, Cattleya intermedia alba, a fine C. Skinneri having white flowers with a tinge of lilac on the lip, some well-bloomed Leptotes bicolor, and others.

Messrs. Sander & Sons, St. Albans, also staged a very effective group, to which a Silver Banksian Medal was given. It contained some finely-flowered examples of Dendrobium thyrsiflorum and D. Devonianum, two good examples of Trichopilia coccinea, Bifrenaria Harrisoniæ pubigera, two fine examples of Lælio-cattleya Hyeana, Angræcum arcuatum, Cœlogyne virescens, some good Odontoglossums, &c. The Odontoglossums included a good home-raised O. crispum, having the segments heavily blotched with reddish purple, and a handsomely blotched O. × mirum, derived from O. crispum and O. × Wilckeanum.

Messrs. Charlesworth & Co., Heaton, Bradford, sent a fine Lælio-cattleya Wellsiana, a good spotted Odontoglossum crispum, and Cattleya Schrœderæ, The Bride, a beautiful white form, with a yellow disc to the lip and a yellow line on the lateral sepals.

M. Mertens, Mont St. Amand, Ghent, sent a few good hybrid Odonto-glossums.

Mr. H. A. Tracy, Orchid Nursery, Twickenham, sent Cattleya Mossiæ. Mrs. H. Rider Haggard, a fine white form, having some slate blue marbling in front of the yellow disc of the lip.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

THE meeting held at the Coal Exchange, Manchester, on May 2nd, completed the 1906-1907 session, and brought together a remarkably fine display, the awards consisting of two Gold Medals, two Silver Medals, two First-class Certificates and 22 Awards of Merit.

The following members of the Committee were present:—E. Ashworth, Esq., Chairman, and Messrs. Ashton, Cowan, Cypher, Duckworth, Keeling, Parker, Rogers, Sander, P. Smith, Stevens, Thompson, Thorpe, Walmsley, Warburton, Ward, Williamson, and Weathers (hon. sec).

W. Thompson, Esq., Stone (gr. Mr. Stevens), received a Gold Medal for a remarkably fine group, a First-class Certificate for O. × Prince Edward of Wales (× Rolfeæ × Harryano-crispum), and Awards of Merit for O. crispum amabile, O. c. A. J. Balfour, O. c. Queen of Spain, O. c. Ronald, O. × Adrianæ Lord Kitchener, O. × amabile mosaicum, O. Harryanum var. Elinor, O. × mulus magnificum, O. × Phœbe Walton var. (cirrhosum × crispum Luciana), O. × Prince Albert (× ardentissimum × Wilckeanum), O. × Rolfeæ splendens, Masdevallia × Chamberlainii, Oncidium monachicum metallicum, and Renanthera Imschootiana.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), also received a Gold Medal for a very fine group, a First-class Certificate for O. crispum President Laurier, and Awards of Merit for Cattleya intermedia cœrulea, Odontoglossum × Coradinei album, O. crispum Pink Beauty, O. × Lambeauianum, Warburton's var., and O. Uroskinneri album.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), received a Silver Medal for a fine group, and an Award of Merit for Cattleya Lawrenceana Hyeana.

Messrs. Cypher & Sons, Cheltenham, also received a Silver Medal for a fine group.

H. J. Bromilow, Esq., received an Award of Merit for Miltonia Roezlii magnifica.

Messrs. Hugh Low & Co., Enfield, received an Award of Merit for Cattleya Mendelii General Botha.

THE TEMPLE SHOW.

"BETTER than ever!" Such was the opinion of experts respecting the Orchids exhibited at the last Temple Show, and exhibitors will have to make an effort if the event is to surpass itself on attaining its majority next year, as the space available at the Inner Temple Gardens is limited. But the future is upon the lap of the gods, and the Royal Horticultural Society will doubtless prove equal to the occasion. Evidence of progress at the recent Show was apparent on every hand, especially in hybridisation, and numerous acquisitions were on view. Odontoglossums are evidently the coming group, claiming six of the nine recipients of First-class Certificates, and three of these being from M. Charles Vuylsteke. A seedling of the brilliant Odontioda × Vuylstekeæ in Messrs. Charlesworth's group, flowering for the first time, served to recall the sensation of the Temple Show of three years ago, and the same group contained several home-raised seedlings of Odontoglossum crispum of considerable promise. As regards culture, the exhibits never attained a higher level of excellence, and the group staged by Major Holford, which gained the coveted Veitchian Cup, would be difficult to beat anywhere, both for culture and quality, while the arrangement was equally good. Three Cultural Commendations were given, one of them to a beautiful example of Odontoglossum crispum in Mr. Colman's group, and another to O. nævium from Messrs. Armstrong & Brown. These with three Awards of Merit completed the Certificates, which might easily have been doubled from the material on view. The group staged by Messrs. Sander was one of remarkable richness, and a plant of Bulbophyllum Ericssoni bearing two of its remarkable inflorescences was one of the most remarkable objects exhibited. But the details must be left for the following report, in which, however, considerations of space prevent us from giving more than the leading features of the groups. The weather was fine, but dull and cold, and the tents were almost always crowded to their fullest capacity. We believe the attendance was a record one. The arrangements were excellent, and the Society and officials must be congratulated on such a brilliant success.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged a magnificent group of splendidly grown plants, occupying a space of 200 square feet, and arranged in the most effective manner. This gained the Veitchian Cup, the premier award in the Show. Fine effects were made by massing some of the principal things, and in one place the surface was broken by a dell, the bottom being filled with a mass of Cypripedium barbatum, contrasting with numerous showy things at the side, and giving a charming contrast. Miltonia vexillaria was shown in prime condition, and about 130 spikes, one noble specimen having 18 spikes and

an aggregate of about 100 flowers. The beautiful varieties Empress Augusta Victoria, Cobbiana, marmorata and virginale were present, while a First-class Certificate was given to the Westonbirt var., having an intense vinous-purple, butterfly-like blotch on the base of the lip. A similar award went to Lælio-cattleya Golden Glory (L.-c. Zephyra × C. Mossiæ Reineckeana), a brilliant golden yellow hybrid, most like the former in shape, with some rosy crimson on the front of the lip. Cattleya Mossiæ was represented by nearly 150 blooms, including the albino Wageneri and two beautiful Reineckeana, the richly-coloured C. M. Princess of Wales receiving an Award of Merit. Of Odontoglossum crispum about 50 plants were present, the varieties and quality being excellent. A fine O. Pescatorei had a spike of 70 blooms, while Odontoglossum × Wilckeanum Rex had 18 blooms. Lælia purpurata was represented by a series of beautiful varieties, including fastuosa, Annie Louise, Backhouseana and alba. Læliocattleyas were brilliant, and included very fine forms of Canhamiana and fastuosa, highburiensis, Ascania, Panope, Baroness Schröder, Ganymede, G. S. Ball, and others. Other noteworthy things were a peculiar orange scarlet form of Brassolælia Gipsy, with rather long segments, B.-l. Helen, Brassocattleya Dígbyano-Schrœderæ, Westonbirt var., B.-c. Digbyano-Mossiæ, the brilliant Sophrolælia læta Orpetiana, Cattleya × Parthenia Prince of Wales, the beautifnl white C. × Dusseldorffii var. Undine, C. × Empress Frederick, Miltonia × Bleuana, M. Roezlii alba, Vanda teres, Dendrobium Dalhousieanum and var. luteolum, Phalænopsis amabilis, the remarkable Chondrorhyncha Chestertoni, Cymbidium tigrinum, Lælia majalis alba, Epidendrum radicans, Thunia × Veitchiana, T. Marshalliana, Cypripedium Lawrenceanum and var. Hyeanum, C. callosum Sanderæ with six flowers, C. × Maudiæ, a very fine C. niveum, &c.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), staged a large and excellent group, on the opposite side of the tent, with a group of well-flowered Epidendrum × Boundii at the end of the tent, a Silver Cup being awarded. The centre was occupied by some beautiful white Cattleyas, with numerous C. Mossiæ, C. Mendelii, and Lælia-cattleyas on either side, and at the back some good Cymbidium Lowianum, C. L. concolor, C. × Lowio-eburneum, Gatton Park var., Oncidium superbiens, and other tall things. We also noted a mass of Spathoglottis aurea and S. × Colmanii, with another of Lælia-cattleya Phœbe, clusters of the charming Cypripedium concolor and C. niveum, the latter forming a setting for a plant of Dendrobium Victoria-Regina, the rare Miltonia lævis, some fine M. vexillaria, Bulbophyllum Lobbii and var. Colossus, Phaius × Norman, Thunia × Veitchiana, the pretty light Cypripedium bellatulum Princess Clementine, C. Lawrenceanum Hyeanum, the handsome Odonto-

glossum × Wilckeanum The Don, O. polyxanthum, O. × Andersonianum Crawshayanum, the yellow O. Hallii var. E. Ashworth, and some fine O. crispum, conspicuous among these being O. c. caudatum, O. c. Colmanii, O. c. Richard Causton and O. c. Mary Colman, the latter a fine plant with three splendid spikes, which gained a Cultural Commendation.

Mr. Bischoffsheim, Warren House, Stanmore (gr. Mr. Doig), staged a very bright and effective group, composed largely of Cattleya Mossiæ, C. Mendelii, and Lælia purpurata, together with Brasso-cattleya Digbyano-Mossiæ, Odontoglossum × Adrianæ, O. Hallii, O. citrosmum album, O. crispum, O. gloriosum, O. × Andersonianum, O. luteopurpureum, and Cypripedium bellatulum, a Silver-gilt Flora Medal being awarded.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), also received a Silver-gilt Flora Medal for a fine group, containing a noble specimen of Renanthera Imschootiana with two fine spikes, some very good Cattleya Mendelii and C. Mossiæ, C. Mossiæ Wageneri, Lælia purpurata alba with only some dusky lines in the throat, some good Miltonia vexillaria, M. Phalænopsis, M. Roezlii alba, Calanthe veratrifolia, Odontoglossum × Wendlandianum with three fine spikes, O. Pescatorei, a few good O. crispum, Cypripedium × Annie Measures, Dendrobium Falconeri, and Masdevallia ignea, arranged with maiden hair ferns.

Mrs. Stonyforth, Kirk Hammerton Hall, Yorks (gr. Mr. Millington), received a Silver Banksian Medal and a Cultural Commendation for a noble specimen of Dendrobium thyrsiflorum, about three feet across, and covered with bloom.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), received an Award of Merit for Odontoglossum × Thompsonianum superbum (Edwardii × crispum), from the same source as the original, being the only other plant, but bearing rather finer flowers.

R. Ashworth, Esq., Newchurch, Manchester (gr. Mr. Pidsley), staged a small group, mostly of Odontoglossum crispum, and including the singular O. c. Marjorie, which keeps quite constant, with O. Pescatorei, Miltonia vexillaria, Cattleya Schilleriana, Cypripedium callosum Sanderæ, &c.

Mr. R. Robinson, Roath Park, Cardiff, sent an inflorescence of a curious abnormal form of Dendrobium thyrsiflorum, approaching D. t. Gallice-anum.

J. Rutherford, Esq., Beardwood, Blackburn (gr. Mr. Lupton), sent a small group, including Cattleya intermedia alba, C. Aclandiæ, C. Mossiæ Reineckeana, C. M. Rappartiana, Dendrobium suavissimum, &c.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya Mossiæ Miss Mary Knollys, a fine white form, having crimson-purple markings in front of the orange-coloured disc.

Messrs. Sander and Sons, St. Albans, staged a magnificent group, two

bays in extent, alike excellent for culture, quality, and arrangement, which deservedly gained a Gold Medal. It was especially rich in fine Odontoglossums, which almost compel a detailed notice. Two which gained First-class Certificates were O. crispum xanthotes, White's var., with very broad white segments, each bearing a few orange-yellow blotches, and O. c. solum, a neat form, having white sepals and petals, and a lip almost wholly dark ruby-purple, forming the strongest possible contrast—a quite unique variety. Other noteworthy varieties were the richly-coloured O. c. Sanderæ, O. c. Prince of the Asturias, and O. c. Lord Cromer (two-richly-blotched forms obtained by crossing a good blotched form with O. c. Graireanum), and O. c. Beauty, a much spotted form. The hybrids included O. × splendidissimum (Pescatorei × ardentissimum), a large heavily spotted form closely resembling the former in the shape of the lip, O. × Prince Edward of Wales, O. × Cooksoniæ (× ardentissimum × percultum), bearing a close spike of thirteen flowers, with rosy ground colour, richly blotched with purple, O. × Lawrenceanum splendidum, O. × Phædra (Hallii × Pescatorei), a pretty light yellow blotched form, most like the latter in the lip, O. × ardentissimum Kaliston, and the Earl, two finely spotted forms, a fine dark O. × Fascinator, O. × Wilckeanum Miss Louisa Fowler, bearing two spikes of large primrose yellow flowers blotched with brown, O. × excellens, O. × crispo-Harryanum, O. × mirum magnificum, a peculiar yellow form of O. × loochristiense, and O. × Prince Albert, with reddish flowers, tipped and margined with white. Among the species were O. ramosissimum, O. Edwardii, O. cordatum, and O. c. aureum, O. polyxanthum, and O. Pescatorei var. Princess, a fine white. Cattleyas were excellent, and included a fine mass of C. Mossiæ with over 100 flowers, some choice white forms, some excellent C. Mendelii, C. Skinneri, C. Schrœderæ, C. × Kienastiana, and C. citrina. Other choice things noted were some good forms of Lælio-cattleya Canhamiana, Brassocattleya Mrs. J. Leemann var. Rajah, a very fine form, Dendrobium thyrsiflorum almost covered with bloom, Zygopetalum rostratum, Miltonia lævis, a fine example of M. Warscewiczii, some good M. vexillaria, two fine examples of Odontonia × Lairesseæ, Cymbidium Huttoni, C. insigne, Renanthera Imschootiana, Vanda cœrulea, Oncidium Gardneri, O. Marshallianum, and O. Harrisonianum, the green Lycaste Locusta, L. gigantea, Sobralia macrantha Kienastiana, Lælia tenebrosa, a nearly white L. purpurata, and a pretty little group of Cypripedium bellatulum arranged in a little dell. The most remarkable of botanical Orchids was a fine plant of Bulbophyllum Ericssoni bearing two umbels of eight and nine flowers, these being arranged in a circle, with the dorsal sepals piled up in the centre like a Chinese pagoda. Others were, the rare Malayan B. orthoglossum (Kränzl.), Palexia maculata, a light-green form of Catasetum trifidum,

Octomeria diaphanes, Epidendrum aromaticum, the striking Scuticaria Steelii, Brassia verrucosa, Ornithocephalus grandiflorus, and various other interesting things.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a magnificent group, to which a Silver Cup was awarded. It was over a bay and a half in extent, but the space was too limited for such a rich collection. Here, too, the Odontoglossums were in strong force, and seven home-raised blotched O. crispum, flowering for the first time, were pointed out, which are seedlings of much promise, O. c. heatonense being a particularly heavily-blotched flower of fine shape. A good form of O. × Lambeauianum was remarkable for flowering on its first bulb, being only about two years old. O. Hallii × hastilabium was a very pretty hybrid fairly intermediate in character. There were several plants of the graceful O. × Phœbe, with others of O. × P. magnificum (cirrhosum × crispum Lucianum), with large rose-purple blotches. A form of O. × amabile was rose-purple almost throughout. There were also good forms of O. × Adrianæ, a pretty seedling from O. × Rolfeæ × O. Pescatorei Charlesworthii, a prettily spotted O. Pescatorei, and good examples of other showy species and hybrids. Messrs. Charlesworth also showed their first seedling of Odontioda × Vuylstekeæ, a brilliant little gem with three flowers, which only wants growing on. Lælio-cattleyas were particularly fine, especially forms of Fascinator and Canhamiana, L.-c. Berthe Fournier being also very regular in shape and colouring. Cattleyas were excellent, particularly some forms of C. Mendelii and white and coloured C. Mossiæ, one C. M. Wageneri being particularly interesting as having come perfectly true from seed, and of fine quality. The new Dendrobium Bronckhartii (Wildem.) was also shown, and approaches D. Farmeri in character. Other interesting things were D. atroviolaceum, Renanthera Imschootiana, Lycaste gigantea, the rare *Zygopetalum* Roeblingianum, Oncidium phymatochilum, some very good Miltonia vexillaria, including a pure white form and the superb var. gigantea, Trichopilia coccinea, Phalænopsis Lueddemanniana, Bifrenaria Harrisoniæ, some brilliant Epiphronitis Veitchii, Brassocattleya Digbyano-Mossiæ var. Queen Alexandra, Cypripedium bellatulum Princess Clementine with pretty light rosy spotting, &c., &c.

Messrs. Hugh Low & Co., Enfield, also received a Silver Cup for a very fine group, over a bay in extent. It contained a particularly rich series of Cattleya Mossiæ forms, white and coloured, with a good series of C. Mendelii, together with C. × Parthenia Prince of Wales. C. Skinneri alba, C. aurantiaca, Lælia purpurata bella and other forms, the richly-coloured Lælio-cattleya Dominiana superba, Sophronitis grandiflora, a fine form of Odontoglossum × Andersonianum, some good O. × Adrianæ and O. crispum, several examples of the rare little O. blandum, Renanthera

Imschootiana, the fine Cypripedium × Statherianum (Mastersianum × Chamberlainianum), a pretty little cluster of C. niveum, Dendrobium Parishii, D. cretaceum album, Epidendrum atropurpureum, E. glaucum, E. vitellinum, the curious Xylobium squalens, Physosiphon Loddigesii, Calanthe veratrifolia, Cirrhopetalum picturatum, Oncidium cucullatum, O. leucochilum, O. Marshallianum, Phragmopedilum caricinum, the pretty little Leptotes bicolor, and others.

M. Ch. Vuylsteke, Loochristi, Ghent, showed four seedling Odontoglossums of great promise, one being O. crispum Fabiola, a heavily blotched form, the three others each gaining a First-class Certificate, as follows:—O. × gandavense (× ardentissimum × Vuylstekeæ), is of excellent shape, having broad sepals and petals, the greater part of each being occupied by a large blotch of a peculiar dull violet-purple, with the apex and margin white, and the broad lip white in front of the crest. O. × cœruleum (parentage unknown) had more of the ardentissimum shape, and the greater part of the segments was taken up by confluent blotches of a brighter shade of violet-purple. These two, though very diverse in other respects, show the same remarkable break in colour, and, in view of the great variation in secondary hybrids, the question arises whether they may not have arisen from the same cross. Odontoglossum × eximium var. King of England (ardentissimum × crispum), is of fine shape, and the white ground colour is largely obliterated by enormous reddish claret-coloured blotches, those on the lip being a shade more brown.

Messrs. Armstrong and Brown, Tunbridge Wells, staged a very fine and effectively-arranged group, which gained a Silver-gilt Flora Medal. It contained a lot of Cattleya Mossiæ, examples of C. citrina, good forms of Odontoglossum crispum, a fine O. × amabile with a spike of sixteen flowers, O. × Coradinei, a superb O. × ardentissimum, O. × Adrianæ, a beautiful example of Odontoglossum nævium bearing two panicles, each with five side branches, which received a Cultural Commendation, Lælia majalis, some good L. purpurata, Cœlogyne pandurata, two good C. Dayana, Bletia Shepherdii, Sophronitis grandiflora, Masdevallia coccinea, Cymbidium Lowianum, a pan of a dozen Cypripedium bellatulum, C. × callosum Sanderæ, C. × Maudiæ, C. Godefroyæ leucochilum, a fine C. niveum, C. Curtisii, C. × Statherianum (Mastersianum × Chamberlainianum), most like the latter in habit and the former in colour, a pretty hybrid from C. superbiens × Chamberlainianum, having spotted petals with much of the habit of the latter, Bulbophyllum Lobbii, &c.

Messrs. W. Bull and Sons, Chelsea, also received a Silver-gilt Flora Medal for a brilliant group, consisting largely of Cattleyas, Odontoglossums, fine forms of Lælia purpurata, and other good things of the season, note-

worthy among them being Odontoglossum × ardentissimum Sunset, O. × percultum, O. × amabile, O. × excellens, several good forms of O. crispum, Cattleya Mendelii Princess of Wales, white and coloured C. Mossiæ, &c.

Messrs. Cypher and Sons, Cheltenham, received a Silver-gilt Flora Medal for a very fine group, one of the leading features being an excellent lot of Miltonia vexillaria, including the varieties virginale, leucoglossa, Cobbiana, gigantea, and Empress Augusta Victoria, many good Lælia purpurata, L. tenebrosa, Dendrobium Wardianum album, D. Bensoniæ, Vanda teres gigantea, Cattleya Harrisoniana, C. citrina, and the familiar showy species, some brilliant Lælio-cattleyas and Odontoglossums, the latter including a good O. × percultum, forms of O. crispum, &c., with Epiphronitis Veitchii, Oncidium Marshallianum, O. maculatum, Promenæa citrina, Cypripedium niveum, a prettily spotted hybrid from C. Chamberlainianum × Godefroyæ leucochilum, &c.

Mr. John Robson staged a pretty little group, his best plant being Odontoglossum × ardentissimum Robsonæ, which gained a First-class Certificate. It is a very large form and equally good in other respects, the greater part of the sepals and petals being claret-coloured, with the margin and tips white. It also contained some good O. crispum varieties, O. × Lambeauianum, Anguloa Clowesii, Masdevallia ignea, Cattleya Mossiæ, Lælio-cattleya Fascinator, Oncidium phymatochilum &c.

Messrs. James Veitch and Sons, Chelsea, received a First-class Certificate for the handsome Cypripedium tibeticum, a handsome hardy species having very dark purple flowers. They also showed Cattleya Mossiæ Rosalind and two good Brassocatlælia Veitchii.

M. Ch. Maron, Brunoy, France, received an Award of Merit for the large and handsome Brassocatlælia Lido (B. Digbyana × L.-c. Henry Greenwood), having rosy-lilac sepals and petals, and a darker well-fringed lip with yellow throat.

Messrs. Linden, Brussels, sent a few good Odontoglossums, the best being the seedling O. crispum Roi d'Angleterre, a very fine form heavily blotched with bright claret-red. They also sent about eight particularly fine Cochlioda Noetzliana, two of which were orange-coloured and very distinct from the rest.

Messrs. Cutbush, Highgate, had a particularly fine lot of hardy Cypripediums in their rockwork group outside, these including many C. Reginæ, pubescens, parviflorum, acaule, montanum, californicum and macranthum, some of the latter being prettily mottled with white. Some of these were also included in a group of herbaceous plants in the main tent, while a good many were scattered about among herbaceous plants in the long tent, with a few Orchises, &c.

ODONTOGLOSSUM × PRINCE EDWARD OF WALES.

THE spike of the very handsome Odontoglossum × Prince Edward of Wales has been sent from the collection of William Thompson, Esq., Walton Grange, Stone, by Mr. Stevens. It was exhibited by Messrs. Sander and Sons, St. Albans, at the R.H.S. meeting held on April 30th, under the name of O. × Prince Edward of Wales, and received a First-class Certificate, the parentage being given as O. × Rolfeæ ♀ × crispo-Harryanum ♂. The plant is remarkably vigorous, and the spike originally bore twelve very fine flowers. In shape these are most comparable with O. × crispo-Harryanum, but the ground colour is white, and the very copious blotching may be described as light claret-purple, with the centre of the disc yellow. The lower flowers measure over 3½ inches from tip to tip of the petals, which themselves are 1¼ inches broad, and the dorsal sepal an inch broad. The markings on the sepals take the form of three broad bars, and those on the petals are more like zones of confluent blotches, while the basal half of the lip is crowded with numerous small blotches and dots, the latter chiefly near the margin. It also received a First-class Certificate from the Manchester Orchid Society on May 16th, when exhibited by Mr. Thompson.

The appearance of this hybrid raises a rather curious question of nomenclature, one phase of which is alluded to by Mr. Stevens. There is a strong family resemblance to several earlier hybrids, and an analysis of parentage shows that we have five recognised hybrids, of distinct origin, descended from the same three original species, O. crispum, Harryanum, and Pescatorei, as follows:—

1. O. × percultum (Rolfeæ × ardentissimum).
2. O. × Ossultoni (crispo-Harryanum × Pescatorei).
3. O. × venustulum (crispo-Harryanum × ardentissimum).
4. O. × Lambeauianum (Rolfeæ × crispum).
5. O. × Prince Edward of Wales (Rolfeæ × crispo-Harryanum).

All would appear distinct, but an analysis of parentage would bracket 1 and 2 together, also 3 and 4, thus:—

O. Pescatorei ½, crispum ¼, Harryanum ¼ = O. × percultum (Ossultoni).

O. crispum ½, Harryanum ¼, Pescatorei ¼, = O. × venustulum (Lambeauianum).

O. Harryanum ½, crispum ¼, Pescatorei ¼, = O. × Prince Edward of Wales.

And a hybrid of identical composition to the last might be obtained by crossing O. Harryanum with O. × ardentissimum.

Later on we may get further combinations in which these three species

are united in different proportions, when it will be impossible to ascertain their origin without the actual record, even if this is not already the case. A similar condition of things is at least suspected among natural hybrids, so that we hope hybridists will preserve careful records of their crosses, and thus enlighten us further as to what is taking place in nature.

ORCHIDS AT ROSEFIELD, SEVENOAKS.

IT is interesting to watch the progress being made in the raising of Odontoglossums, and with this end in view we went down, early in April, to see the well-known collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, where so many interesting experiments have been made. The seedlings, of which particulars have already been given (*O.R.* xii. pp. 203-208), are rapidly becoming the prominent feature of the collection, the work in hand being everywhere apparent—numerous capsules, germinating seedlings in various stages on the pots of the parent plants, and hundreds of others steadily progressing towards the flowering stage. One interesting novelty was just expanding, being a seedling from O. Harryanum and O. Hunnewellianum, of which a description was given at page 157, under the name of O. × Iago. O. × Terpsichore is another very pretty hybrid raised in the collection, between O. Pescatorei and O. polyxanthum, of which forms were in flower, both with white and yellow ground colour. A form of O. × Harryano-triumphans bore a spike of eight very large and richly-coloured flowers, the seed parent being O. Harryanum. Three pretty forms of O. × Fascinator raised in the collection were also in flower, and the curious seedling from O. crispum crossed with O. × Wilckeanum, which has reverted to a quite unspotted form.

Mr. Crawshay pointed out a nice little batch of Odontioda × Vuylstekeæ, some of which were making their third bulb, and may begin to flower next year. He has a lot of other Cochlioda Nœtzliana crosses, but a curious thing which he remarked is that this species can only be used as the seed parent, as all attempts to use the pollen on Odontoglossums have resulted in failure. It is a good seed parent, and one plant bearing four and another two capsules were pointed out. About forty crosses with it were attempted last year. Odontoglossum Edwardii behaves in a similar way, and has only succeeded as the seed parent.

Seed-bearing is not considered injurious when plants are strong and well-rooted, in proof of which a plant of O. crispum was pointed out bearing two large capsules and a strong spike of ten buds, without any apparent diminution in vigour. A plant of O. × Queen Alexandra also carried a pod and a fine spike, while one of O. Harryanum carrying a pod was equally vigorous, and the list could be much prolonged, for numerous plants were bearing capsules. There are many strong specimen plants in

the collection, the one of O. crispum White Empress, which gained the R.H.S. First Diploma last year, having twenty-one very fine pseudobulbs, and this was sending up three strong spikes. O. × Coradinei Crawshayanum is a fine plant twelve years old, now carrying two spikes of fifteen and seventeen flowers, three of the latter being on a side branch.

In this connection we may mention the series of plants in glass pots, which continue to give great satisfaction, and Mr. Crawshay considers that under this treatment the plants can be grown more quickly. The glass pot is of the ordinary shape, with a single hole at the bottom, over which a layer of bracken rhizome is placed, the pot then being filled with the usual compost of peat and moss. Owing to the glass being transparent, the moss keeps alive and green, and the roots which work amongst it can be seen. A glass pot could have no advantage for ordinary terrestrial plants, whose roots work in the dark, but in the case of epiphytes it is different, and it is in the effect of light on the roots, or on the condition of the compost, that the cause of any improvement must be sought. It is now more than an experiment, having been tried for years, and the treatment is being extended, so that Mr. Crawshay is satisfied with the result. The question naturally arose, "Will the seeds germinate here?" and the answer was "No," though they have been blown in through the hole at the bottom frequently. It would appear that a more airy position is required for germinating seedlings.

Many beautiful things were in flower, a few of which may be mentioned. O. × mulus bore a fine spike of twelve flowers. O. × Andersonianum Bogaerdeanum is a very handsome form which was figured at page 305 of our fifth volume. There were also some good O. Hallii, O. × Lucasianum, supposed to be a natural hybrid between the preceding and O. cristatellum, O. triumphans Raymond Crawshay, a good brightly coloured form, O. t. latisepalum, numerous good forms of O. crispum, some good O. × Adrianæ, a dark O. Hunnewellianum, O. luteopurpureum Mossiæ, a very beautiful form of the hystrix type, having a white ground to the lip, and others. A very large number of plants were pushing spikes. The plant of O. Lindleyanum aureum, said to be the only one known, was also pointed out, together with O. × Wilckeanum albens, these not being in flower. A very large number of spikes were pushing up, a few of them being hybrid seedlings, and promised to yield a very fine display of flowers in a few weeks' time.

The collection of dried flowers is always interesting, and includes nearly everything in the collection, with many others, some of which are historical. O. crispum Triomphe de Ramboullet, from the Rutherford collection, was pointed out as a bad Wilckeanum, and O. × Braeckmanii, from the collection of M. Metdepenningen, as a form of Adrianæ. There were also flowers from Mr. Leemann, of O. c. Vinicius, constellatum,

funambulum, and one called O. c. Calos, which is said not to be the original of that name. The fifth of the group, O. c. Aramie, was not represented. One is tempted to say more about such a fine series, but space does not permit. Like a collection of paintings, they can be referred to when the plants are not in flower, and if they compare unfavourably with paintings as regards colour, they are often superior in some other respects. And what would one not give to be able to consult the originals from which some of our paintings were made!

Mr. Crawshay is, of course, preserving flowers of his hybrid seedlings as they flower, and judging by the number of plants approaching that stage he will be kept busy for some time to come. Some of the crosses made should throw further light on what is occurring in nature, and we hope that Mr. Crawshay will succeed in adding some forms of sterling merit to his collection, and also preserve flowers of those that are of less horticultural interest. He has already made a good beginning, and the results are now likely to accumulate rapidly. Evidence is particularly desirable of the amount of variation between the seedlings out of the same capsule, and Mr. Crawshay is following the question up with praiseworthy energy, aided by a good assistant in the person of Mr. Stables. We hope to see the results in due time.

CYPRIPEDIUM HIRSUTUM.

THE beautiful North American species generally known as Cypripedium pubescens and C. parviflorum are again making a fine show in our gardens, and as the names are sometimes confused I have been asked to point out the difference between them. Generally speaking C. pubescens has a much larger flower than the other, the sepals and petals often lighter in colour, and the lip somewhat compressed laterally, but nearly all the books agree that they intergrade, and both forms are now flowering at Kew out of the same batch of roots. Several times I have tried to discover some essential difference, both with living and dried specimens, and now some further evidence has appeared.

About a year ago a note on the subject appeared in *Rhodora* (viii. p. 93), by Ora W. Knight, Bangor, Maine. The writer has long doubted their specific distinctness, and now publishes his conclusions on the subject. In May, 1901, a clump of the large-flowered form was found growing in very rich soil, in low shady woods, by Mr. F. M. Billings, who transplanted part of it into poorer soil, in a sunnier spot, in his garden, and in 1905 the characters were so far changed as to pass for the smaller-flowered C. parviflorum. The writer, on the contrary, has annually transplanted some C. parviflorum from a cold bog into very rich soil in his own garden, and those that have been there longest now present the characters of

C. pubescens. When studying the plants in their natural habitat in Maine he has repeatedly found many that were intermediate between C. parviflorum and C. pubescens in character, and in most instances plants readily referable to one or the other, sometimes to both forms, were growing with these intermediates. He also shows that all the characters relied on to separate the two break down on comparison. Even the dwarf, small-flowered plant of the Rocky Mountain region, which looks at first distinct from both, shows no essential differences. The writer concludes that "unless the numerous specimens possessing characters of both forms can be accounted for on the grounds of hybridism we ought to regard them as different phases of the same species."

Miss Grace G. Niles, in her charming book, *Bog-trotting for Orchids*, devotes a coloured plate to each species, and remarks (p. 59) that the larger species grows in the Hoosac Valley, high on the steep sides of the Domelet, while the smaller one seeks the deepest parts of the Swamp of Oracles and Aurora's Bog. But she also records them as growing side by side in the Swamp of Oracles, and adds (p. 57)—"I observed a marked intergrading." A few lines earlier she had remarked that there seemed to to be three different forms, though only two are recognised, but they appeared to "intergrade frequently." And she concluded:—"Close association of habitat has probably something to do with this cross-fertilisation of the two species."

Mr. J. R. Churchill speaks of collecting both species at Williamstown, Mass., "with specimens quite intermediate between the two" (*Rhodora*, i. p. 26).

On reviewing the evidence, and after again comparing the plants, I think they must be forms of a single species, depending upon vigour and the conditions under which they grow. The two are said to extend over the same wide area, and it is not at all like a case of natural hybridisation where the parent species are themselves quite distinct. In fact the most closely allied, or representative species generally grow in different geographical areas, and the parents of most natural hybrids are not the most closely allied species in the genus.

There remains the question of name. Knight proposes to call them C. parviflorum and var. pubescens, the former being the earlier specific name. The two appeared independently, C. parviflorum, Salisb., in 1791, and C. pubescens, Willd., in 1805, but C. hirsutum, Mill., appeared still earlier, in 1768 (*Gard. Dict.* ed. 8, Cyp. n. 3) and, though not very well defined, it clearly represents C. pubescens, and has indeed been adopted for that in several recent works. The correct names will therefore be C. hirsutum and var. parviflorum, which, fortunately, are quite appropriate.

R. A. ROLFE.

PHALÆNOPSIS SANDERIANA.

THE annexed figure represents a very fine inflorescence of Phalænopsis Sanderiana, from the collection of Dr. Hoisholt, Stockton, California, to whom we are indebted for the photograph. Dr. Hoisholt remarks that the spike bore twenty-four flowers, and it is seldom that so many flowers are fully open and in good condition at the same time. He also asks whether

Fig. 22. PHALÆNOPSIS SANDERIANA.

any seedlings of the cross P. Aphrodite × Schilleriana have flowered, and if so how closely they resemble those of the present supposedly distinct species. The remark probably refers to the early history of the plant, when there was much uncertainty as to its origin. It was originally described by Reichenbach, in 1882, as a species (*Flora*, 1882, p. 466), but shortly afterwards the author suggested that hybridisation at home might

throw light on its origin (*Gard. Chron.* 1883, i. p. 466). He then compared it with P. Aphrodite and P. Schilleriana, and called P. casta the "lovely sister," all of which suggested a doubt as to its origin. Still later it was enumerated as a form of P. Aphrodite (Rolfe in *Gard. Chron.* 1886, ii. p. 212). The observations of Mr. C. Roebelen on the distribution of the section Euphalænopsis in the Philippines threw a flood of light on the question, and these have already been summarised in our pages (viii. pp. 133-136). From these it would appear that P. Sanderiana is a distinct local species, closely allied to P. Aphrodite, occurring in abundance in the island of Mindanao and the small island of Balut, at the southernmost point of the Archipelago. In the Davao district it is said to grow in company with P. Aphrodite and a white-flowered species with silver-grey leaves, and that natural hybrids between them occur, a point on which further information is desirable. P. Aphrodite and P. Schilleriana are said to grow in close proximity to each other in the island of Luzon, and it is from such a locality that the natural hybrid P. × leucorrhoda and its varieties casta and Cynthia evidently came. Roebelen mentions three natural hybrids from P. Sanderiana, and it would be extremely interesting to see specimens of them, as well as the species with silver-grey leaves and white flowers which still remains doubtful. P. Sanderiana itself appears to be rare in cultivation at the present time, but its large rose-pink flowers are among the most beautiful in the genus.

NOVELTIES.

THE last issue of the *Kew Bulletin* contains another Decade of New Orchids described by Mr. Rolfe, as follows :—

BULBOPHYLLUM DICHROMUM, Rolfe.—A very distinct and striking novelty, introduced from Annam by Messrs. Sander & Sons, through their collector, W. Micholitz, and flowered at the Royal Botanic Gardens, Glasnevin, in February last. It is allied to B. fuscopurpureum, Wight (see p. 188), but is altogether different in colour, while the lateral sepals are connate at the apex, and the petals do not bear a long bristle, as in that. The flowers are rather large, and are borne in a loose raceme of about twelve, the colour being bright yellow, with a dark purple lip, forming a very striking contrast.—*Kew Bull.* 1907, p. 128.

BULBOPHYLLUM TRIDENTATUM, Rolfe.—A New Guinea species, introduced by W. Micholitz, and flowered with Messrs. Sander & Sons, St. Albans, in May, 1902. It is allied to B. mandibulare, Rchb. f., but has narrow attenuate lateral sepals, short petals, and tridentate column teeth. The flowers are dull yellowish green and brownish purple.—*l.c.* p. 128.

CŒLOGYNE MOOREANA, Hort. Sand.—A very handsome species, the

nearest to C. cristata, Lindl., which has yet appeared, but differing in the longer leaves, taller scape, deciduous bracts, and smaller flowers. It is a native of Annam, the habitat being given as Laos side of the Lang Bian Range at 1,300 m. altitude. It flowered with Messrs. Sander & Sons, the introducers, in December, 1906, and received a First-class Certificate from the R.H.S. It is dedicated to Mr. F. W. Moore, A.L.S., Keeper of the Royal Botanic Gardens, Dublin, who also flowered it at about the same time. The flowers are pure white, with a deep yellow blotch and yellow hairs on the disc of the lip.—*l.c.* p. 129. (See also p. 23 of the present volume).

CALANTHE BURMANICA, Rolfe.—A native of the Shan States, Burma, which flowered at the Royal Botanic Gardens, Glasnevin, in September, 1896. It is allied to C. Ceciliæ, Low, and has mauve purple flowers, with a yellow crest.—*l.c.* p. 129.

CYMBIDIUM PUMILUM, Rolfe.—Introduced by Mr. Peter Barr, through a Japanese nurseryman, and flowered at Kew in May, 1900. It is believed to be only a garden plant in Japan, and has recently appeared in a collection of dried plants from Yunnan. It has also been figured in the Japanese work *Somoku Zusetsu* (xviii. t. 13) under the name of "Kinriyohen." It is a dwarf species, with narrow leaves, and racemes of light reddish brown flowers, with a white lip dotted and lined with reddish brown, and the disc and keels bright yellow. It is allied to C. ensifolium, Swartz.—*l.c.* p. 130.

STAUROPSIS CHINENSIS, Rolfe.—A Chinese species not yet in cultivation. It is a native of the province of Kwangsi, and was collected twenty miles from Lungchow, on the way to Telang, by Morse. It is allied to S. gigantea, Benth., and has fleshy yellow flowers. bearing red ring-like blotches on the sepals and petals.—*l.c.* p. 130.

STAUROPSIS LUCHUENSIS, Rolfe.—A native of the Island of Niumen in the Luchu Archipelago, presented to Kew by Prof. Matsumura, who states that it has been cultivated in greenhouses at Tokio for a long period under the name of "Niumen-Ran" (Niumen Orchid). It was also figured in *Somoku Zusetu* (xviii. t. 23), as long ago as 1856. It is allied to S. undulata, Benth. but has yellow flowers spotted with brown.—*l.c.* p. 131.

SACCOLABIUM WOODFORDII, Rolfe.—A native of the Solomon Islands, of which a drawing and dried flowers were sent to Kew by Mr. C. M. Woodford, Resident and Deputy Commmissioner. It is allied to S. flexum, Rchb. f., and has dense racemes of pale vermillion flowers tipped with brown on the inside of the lip.—*l.c.* p. 131.

CLEISOSTOMA SECUNDUM, Rolfe.—A Burmese species, introduced by Messrs. Hugh Low & Co., Enfield, who flowered it in May, 1890, and it has been subsequently sent from Glasnevin. It bears one-sided racemes of rose-pink flowers, with the front lobe of the lip rose-purple.—*l.c.* p. 131.

DISA BAKERI, Rolfe.—A British East African Orchid, described from dried specimens collected by G. Sandbach Taylor at Kinagop Hill and Mau, at 2,400 to 3,000 m. altitude. It is allied to D. Deckenii, Rchb. f., and has pink flowers.—*l.c.* p. 132.

BULBOPHYLLUM FUSCOPURPUREUM.

THIS remarkable South Indian Bulbophyllum has just flowered with Mr. James O'Brien, Harrow-on-the-Hill, it having been imported with Cœlogyne corrugata. It was described and figured by Wight, in 1852 (*Ic. Pl. Ind. Or.* v. p. 6, t. 1651), from materials collected by Mr. Jerdon, the locality being given as "Neilgherries, on trees and rocks along the banks of the Kartairy river, below Kaitie, and also below Nedawuttim on the north-western slopes." It does not appear to have been collected again until now. It belongs to the small group of species characterised by having a pair of curved basal side lobes to the lip, but is markedly different from B. Careyanum, B. cupreum, and their allies in its very large flowers, and the filament-like extension of the petals, which are clavate at the apex, and so delicate as to wave about in a slight breeze. The plant has a very stout woody rhizome, which bears tetragonal yellowish one-leaved pseudobulbs, 1-1½ inches apart. The leaves are shortly petioled, oblong, about 3-4 inches long. The scapes are about six inches long, and bear six or seven flowers at the apex, these being over an inch across their broadest diameter, and the colour dull reddish brown, the lip being rather darker than the rest of the flower. The petals are about half an inch long and broadly triangular at the base. Mr. O'Brien remarks that the buds remain for some time concealed behind the rather large bracts, but afterwards the pedicels elongate and the flowers appear well extended. —R. A. R.

PHAIUS HYBRIDS.

AMONG the triumphs of the hybridist's art the beautiful hybrid Phaius occupy a foremost place, as has been frequently demonstrated, in which connection everyone will think of the beautiful series raised in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, of which an account is given on another page. Five beautiful flowers have been sent by Mr. Chapman:—Phaius × Harold is a fine thing, derived from P. Wallichii Sanderianus ♀ and P. × Norman ♂, and having coppery yellow sepals and petals much like the former in shape, but the lip much more open, and the spur much shorter. The colour is reddish brown, with darker veins, which alternate with paler ones towards the base, and a deep yellow central band on the disc. P. × Phœbe is a very beautiful thing, and is descended from the same seed parent crossed with P. Humblotii. It is most like the latter in shape, and has salmon-pink sepals and petals,

and a very open, rich reddish purple lip, with some yellow veins at the base, and a very short spur. P. × Phœbe superbus has a darker lip. P. × Cooksonæ is descended from P. grandifolius ♀ and P. Humblotii ♂, and naturally bears a very close resemblance to the latter. It is slightly smaller, and has rather browner sepals and petals, and the lip more purple in front but browner on the lower half. P. × oakwoodiensis marks a further advance, being from P. × Cooksoni crossed with the pollen of P. Humblotii. The flowers are most like the latter in shape, and the sepals and petals are very broad, and light rose with pale yellow streaks and margins, and a very open rose-purple lip, with a very prominent yellow crest, and a white area at the base of the column. The lip is broadly sac-shaped at the base, without any trace of a spur. These hybrid Phaius, in which the two Madagascar species, P. simulans and P. Humblotii, have been so prominently concerned, are of very easy culture, and extremely decorative, in which connection we may mention the series which were figured at pp. 136, 137 of our eleventh volume.

ORCHIDS IN SEASON.

SEVERAL beautiful flowers are sent from the collection of H. S. Goodson, Esq., by Mr. Day. Cattleya Schrœderæ alba is a fine white flower with a deep yellow throat to the lip, and very fragrant. C. Mossiæ Wageneri is the corresponding albino of C. Mossiæ, a variety which is always admired, besides which there are two very fine coloured forms, of excellent shape. There is also a fine form of C. Mendelii in which the front of the lip is very richly coloured, and, lastly, Lælia purpurata alba, in which the only remaining colour is some brown lining in the yellow throat of the lip. They bear evidence of excellent culture.

A remarkably fine flower of Cattleya Trianæ delicata has been sent from the collection of J. H. Grogan, Esq., Slaney Park, Baltinglass. It is large and of perfect shape, the petals being very broad, and the colour delicate blush, with an orange throat to the lip. Mr. Grogan remarks that he has had the plant about thirteen years, in fact it is one of his first Cattleyas and still one of the best.

A number of interesting things are blooming in the collection of J. J. Neale, Esq., of Penarth, of which flowers are sent by Mr. Haddon. The majority are well-known, and among them may be mentioned the beautiful Miltonia Warscewiczii var. Weltoni, M. Roezlii alba, Trichopilia tortilis, with corkscrew-like sepals and petals, Odontoglossum Kegeljani, O. × Coradinei, and several others, Cœlogyne speciosa, Cattleya Forbesii and Aclandiæ, Oncidium concolor, Sobralia macrantha, Diacrium bilamellatum, the pretty-little Leptotes bicolor, Epidendrum atropurpureum roseum,

Dendrobium albosanguineum, Devonianum, Parishii, and several others, with Masdevallia ionocharis, ludibunda, simula and Schrœderiana, forming a very charming little group.

HYBRID ODONTOGLOSSUMS.

A THEORY that cannot be proved is often worse than one that seems wide of reality. Mr. Crawshay considers that attempts to raise blotched forms of Odontoglossum crispum from seed have not been very successful owing to the reversion which takes place, these "crispums" being of hybrid origin. But let me ask this question of Mr. Crawshay, the skilful hybridiser. Did you ever try to raise varieties of Odontoglossum Pescatorei (or nobile) that are remarkable for the blotches found on the flowers? Would you then be more successful? For myself I can answer that I was not so lucky. But shall I therefore conclude that these blotched Pescatorei are of hybrid origin? Everyone would ask me where are the parents which have given the colour so peculiar to the wonderful O. Pescatorei Veitchianum, Thompsonianum, and others that are well known? And when we admire those splendidly blotched crispums, as apiatum, Franz Masereel, and numerous other magnificent forms, why should we assume that they are natural hybrids created just for man's happiness?

P. BOPPE.

ORCHIDS AT KEW.

AMONG the numerous interesting Orchids which have recently flowered at Kew the following are worthy of mention. A fine plant of Lacæna bicolor has just prodnced two of its graceful pendulous spikes, recalling those of Aërides in character, though the habit is so different. Its affinity is with Acineta and Peristeria, both of which have been represented by flowering plants, the former by A Homboldtii, and the latter by the rare P. cerina. Gongora gratulabunda is another very interesting ally which has flowered well. Sarcochilus Berkeleyi is a rare and very pretty species, producing pendulous spikes of white Aërides-like flowers with a purple lip. It succeeds well in a basket in the Warm house. Saccolabium rubescens has again produced a couple of its erect spikes of rosy flowcrs. A plant of Cœlogyne Dayana with sixteen spikes about two feet long was quite a picture. In the Cool house a plant of the charming Odontioda heatonensis has produced a couple of good spikes. Other interesting things are the rare Chysis lævis, the charming little Epidendrum Endresii, Broughtonia lilacina, Oncidium altissimum, with a fine spike about ten feet long, the new Dendrobium Dutoisianum (Wildem.), &c. Of the most popular kinds a long list could be drawn up, with numerous botanical species, for the houses have been very gay for a long period.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during June, on the 11th and 25th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold a meeting at the Coal Exchange, Manchester, on June 13th. The Orchid Committee meets at noon, and the exhibits are open to inspection from one to three p.m. At this meeting arrangements for the coming year will be made.

It is with the deepest regret that we have to announce the death of Dr. Maxwell T. Masters, F.R.S., the highly esteemed editor of the *Gardener's Chronicle* for the last forty-two years. The deceased, who was in his seventy-fifth year, had been ill for about four weeks with pleurisy, terminating in pneumonia, and the end came from heart failure on Thursday evening, May 30th. Next month we hope to say something about his career.

Several beautiful flowers are sent from the collection of G. M. Jessop, Esq., Cliffe Cottage, Rawdon, Leeds, by Mr. Wilkinson. There is a good form of Cattleya Schrœderæ, and a beautiful white variety called Fairy Queen, Dendrobium nobile albiflorum, having white sepals and petals with the usual coloured lip, the prettily fringed D. Loddigesii, and a flower of the rare D. albosanguineum. Lastly there is a very interesting hybrid between Lælia xanthina ♀ and Brassavola Digbyana ♂, for which we suggest the name Brassolælia Jessopii. The flower is fairly intermediate in shape, and has a prettily fringed lip, the colour being light greenish yellow.

A photograph showing a very beautiful group of Cattleya Trianæ varieties is sent from the collection of C. C. Moore, Esq., Hackensack, New Jersey, U.S.A. It shows the usual amount of variation, and some of the varieties are very fine. Photographs of the exterior of the house in summer and winter are also sent, and the latter shows the house covered with snow and wreathed with icicles, the photograph having been taken during a spell of severe weather.

ORCHID PORTRAITS.

BRASSOCATLÆLIA FOWLERI.—*Journ. Hort.*, 1907, i. p. 455, with fig.

BRASSOCATLÆLIA VEITCHII.—*Journ. Hort.*, 1907, i. pp. 478, 479. with fig.

BRASSOLÆLIA GIPSY.—*Gard. Mag.* 1907, pp. 331, 332, with fig.

BRASSO-LÆLIO-CATTLEYA FOWLERI.—*Gard. Chron.* 1907, i. p. 303, fig. 125. This is Brassocattleya Fowleri.

CATTLEYA × FABIA.—*Journ. Hort.* 1907, i. p. 409, with fig.

CATTLEYA TRIANÆ.—*Trib. Hort.* ii. p. 259, with fig.

DENDROBIUM FUSIFORME.—*Gard. Chron.* 1907, i. p. 337, fig. 142.

MILTONIA ROEZLII.—*Amer. Gard. Chron.* v. p. 32, with fig.

ODONTIODA HEATONENSIS.—*Bot. Mag.* t. 8133.

ODONTIODA VUYLSTEKEÆ.—*Rev. Hort. Belge*, 1907, p. 169, fig. 39 and tab.

ODONTOGLOSSUM × ARDENTISSIMUM VAR. ESPERANCE.—*Rev. Hort*, 1907, p. 231, fig. 5. VAR. HERBERT GOODSON, *Journ. Hort.* 1907, i. p. 431. with fig.

ODONTOGLOSSUM CRISPUM.—*Amer. Gard. Chron.* v. p. 32, with fig. VAR. FOWLERIANUM, *Gard. Chron.* 1907, i. pp. 277, 278, fig. 115. VAR. PERFECTION, *Gard. Mag.* 1907, p. 309, with fig.

ODONTOGLOSSUM GRANDE ALEXANDRA REGINA.—*Gard. Mag.* 1907, p. 370, with fig.

ODONTOGLOSSUM × PERCULTUM.—*Rev. Hort.* 1907, p. 231, fig. 3.

ODONTOGLOSSUM × PRINCE EDWARD OF WALES.—*Gard. Chron.* 1907, i. pp. 302, 303, fig. 124.

ODONTOGLOSSUM × ROLFEÆ.—*Rev. Hort.* 1907, p. 231, fig. 4.

ODONTOGLOSSUM × VUYLSTEKEÆ.—*Rev. Hort.* 1907, p. 231, fig. 2; *Trib. Hort.* ii. p. 243, with fig.

ODONTOGLOSSUM × VUYLSTEKEI.—*Rev. Hort.* 1907, p. 230, fig. 1.

ONCIDIUM CRISPUM GRANDIFLORUM.—*Journ. Hort.* 1907, i. p. 385, with fig.

ONCIDIUM SARCODES.—*Amer. Gard. Chron.* v. p. 33, with fig.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].*

A.W. We believe the only successful method of raising seedling Odontoglossums is to sow the seeds on the compost of the parent plants, in a house where the parent plants do really well. Drought is fatal and direct sunshine should be avoided. Patience and perseverence should bring success.

F.W.M. The flowers of Dendrobium crassinode seem to be abnormal through the union of the petal to each other and to the base of the column. As they were normal before it looks as if the plant had got out of health.

F.B. We have already a very much longer list.

Photographs received with thanks. De B.C.

We have received numbers 8, 9 and 10 of the excellent little handbooks issued by the Agricultural and Horticultural Association, 92, Long Acre, London. The two former are by T. W. Sanders, F.L.S., the subjects being Allotments and Roses, and the latter by Edward Owen Greening, F.R.H.S, and is devoted to Garden Making. They are eminently practical and well illustrated.

We have received the Catalogue of Orchids and other plants from the Julius Roehrs Company, Exotic Nurseries, Rutherford, New Jersey. It contains an excellent selection of Orchids, and is profusely illustrated from photographs, the figure of the Phalænopsis house being particularly effective. There is also is fine group of Cypripediums, Phaius hybrids, Oncidium splendidum, Lælia purpurata, various popular Cattleyas and Dendrobiums, a house of D. Phalænopsis and others.

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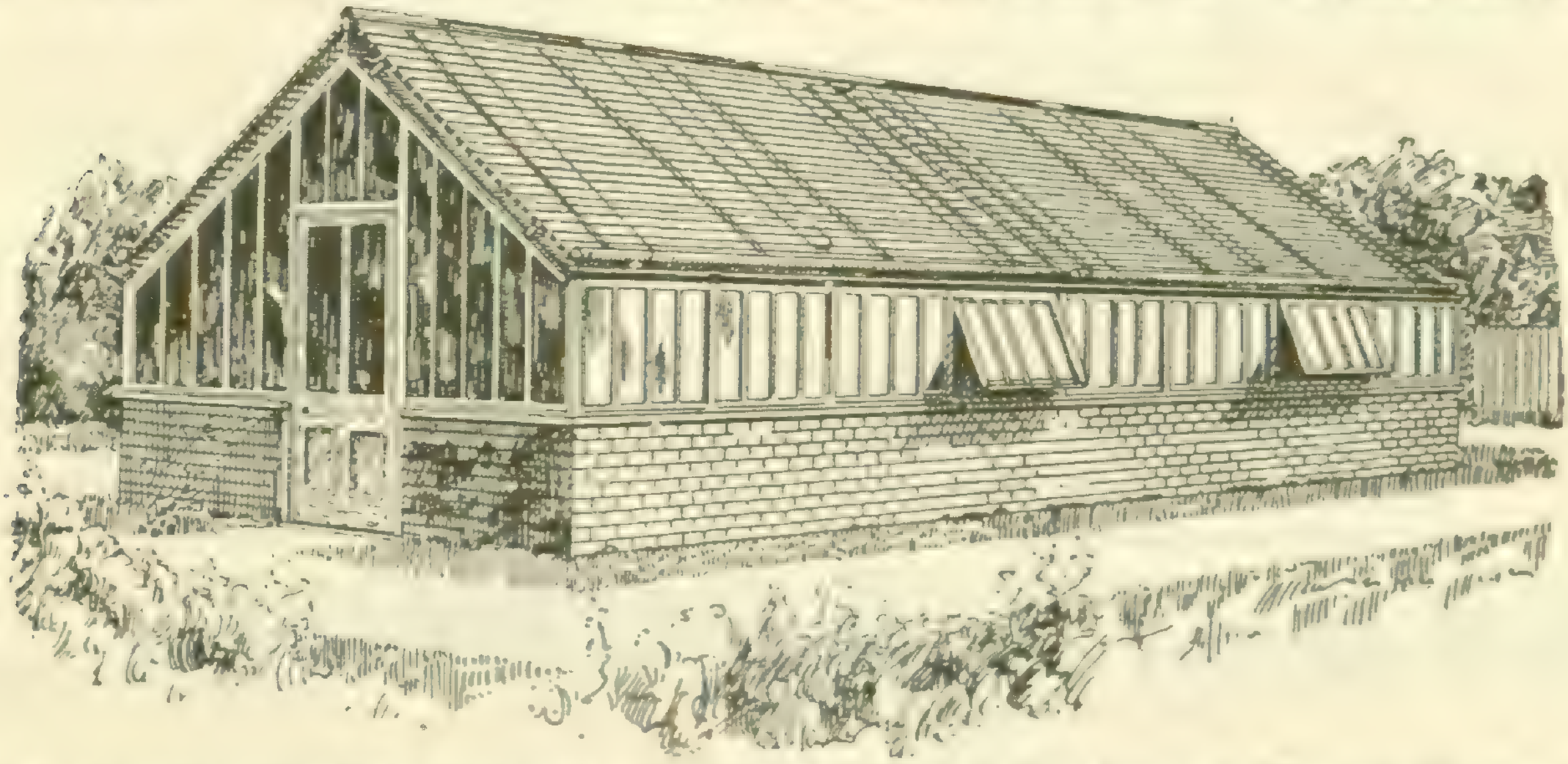

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THE ORCHID REVIEW.

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ORCHIDS AT THE DELL, EGHAM.

ONE of the oldest and richest collections of Orchids in the country is that of Baron Sir Henry Schröder, situated at The Dell, Egham, and if less frequently represented at our Orchid Exhibitions of late years than was formerly the case it still maintains its high reputation for excellence and cultural skill, as we have just had the pleasure of witnessing. To give an account of the twenty or so departments devoted to these beautiful plants at The Dell would tax our own and our readers' patience, for the best part of three hours were exhausted in the company of Mr. Clark, Mr. Ballantine's able chief, in inspecting the treasures there collected. And the time passed only too quickly.

We found Mr. Clark busy among the Cypripedes, and here our notes commence. We were immediately attracted by the numerous fine specimen plants, which have been grown on from small pieces without any cutting or making up, many of which presented masses of bloom, and showed the different kinds at their best. A beautiful clump of C. Lawrenceanum bore 15 very richly-coloured flowers, and among numerous others of this fine species we noted four of the albino variety Hyeanum, one of them being exceptionally large. Here were also some good C. callosum Sanderæ, and a batch of C. × Maudiæ, raised in the collection, three beautiful examples being in flower, and showing the same perfect albinism as the parents. C. × Cymatodes is evidently a very useful thing, for about a score of plants, raised by Mr. Clark from C. Curtisii and C. superbiens, were flowering profusely, and showed the best characters of the parents. It was very interesting to see an original plant of C. Mastersianum, described in 1879, bearing three fine flowers. Specimens of C. barbatum with 25 flowers, and C. × superciliare with 11 and 9 were very effective, and a noble plant of C. × Lord Derby was throwing up ten fine spikes, and will shortly present a picture. A plant of C. Stonei was in flower, but not the remarkable variety platytænium, of which about ten plants were pointed out. It is said to be a very slow grower, scarcely producing more than a leaf a year. There were several fine C. × Harrisianum superbum in flower, with C.

Dayanum, good plants of C. × Euryalus, C. × George Kittel, a form of C. × William Matthews, raised here, with three fine flowers; also C. × Astræa, × vexillarium, glaucophyllum, Godefroyæ, &c.

A seedling, 14 years old, marked C. Mastersianum × Rothschildianum, was at last showing a spike, and should prove interesting. C. × James H. Veitch was pointed out as curious. It was purchased in flower in 1894, but could not be got to bloom again until last year, after a course of starving and cool treatment. It grows well and is now represented by four plants. A seedling raised in the collection from C. Curtisii × Stonei platytænium is said to be quite different from the preceding. A nice batch of seedlings from C. × Harrisianum × Fairrieanum was pointed out, and here it may be remarked that the last-named species is again well represented, and after trials in various houses Mr. Clark is satisfied that it does best in intermediate, not cool, temperature. There were many fine specimens of different kinds not in flower which riveted attention by their robust health.

Here we noted too the pretty little Dendrobium hercoglossum, the handsome D. × illustre, with two spikes, the best having eight flowers, D. × rhodostoma, Spathoglottis Kimballiana, a fine Phalænopsis amabilis, Cœlogyne Massangeana, and various other interesting things.

Among the Tropical American species, now referred to Phragmopedilum, we noted P. × Sedeni and its variety candidulum, the latter with 17 fine spikes, half-a-dozen good P. × leucorrhodum, P. × grande, P. × macrochilum, and various others, including a fine specimen of the original P. longifolium, which is prized as one of the original parents, the series making a fine display. Passing on to another house we noted several of the striking Platanthera Susannæ beginning to flower, and here the original plant of Dendrobium Phalænopsis Schrœderianum was pointed out.

In one of the Odontoglossum houses many interesting things were in bloom, including numerous examples of O. Pescatorei and O. crispum. O. c. Raymond Crawshay and O. c. Rex were conspicuous among the blotched forms, the latter being a fine old variety which always produces short spikes of about six or eight flowers almost in a bunch near the top. There were several good O. Hallii, the variety xanthodon having a spike of 10 blooms, the crest being yellow and the rest of the lip white. Others included the distinct O. ramosissimum, O. Lindleyanum, O. Œrstedii, O. Rossii, O. × Wilckeanum, and O. triumphans. A plant of the old O. liliiflorum was pointed out as very difficult to grow. Here were several plants of Cattleya citrina in flower. Formerly they grew indifferently in the Cattleya house, but they were removed here about ten years ago, on the advice of an American grower, and have succeeded well since. It was interesting to see a pure white Orchis maculata here in a pot, and Mr.

Clark observed that it was picked up in Windsor Park about three years ago by one of the young gardeners.

Other interesting things in flower in this house were a fine plant of Restrepia maculata, a batch of the pretty little Promenæa xanthina, Disa × Veitchii, and three fine specimens of Masdevallia Houtteanna, in ten-inch baskets, crowded with flowers. Some good plants of Cynorchis compacta were making strong growths. They came from Natal, together with Stenoglottis longifolia, a few years ago. Here was a good seed-pod on Cymbidium insigne crossed with C. Lowianum, while, curiously enough, the reverse cross, made at the same time, and in the same house, was already sown and the seeds germinating. Some large specimens of C. Tracyanum and the fine C. Lowianum Tracy's var. were pointed out, not now in flower. Some fine Oncidium macranthum made a good show, while O. insculptum was throwing up a strong spike, and O. incurvum a large number. A plant of Epidendrum myrianthum album was pointed out as having been grown for 20 years, but refuses to flower. It was also interesting to see a good capsule on Odontoglossum × elegans, obtained by crossing with O. Edwardii.

In a Dendrobium house, where the plants hung in rows from the roof, in thriving condition, we saw a fine bank of Vanda teres, with about 200 spikes, including the varieties alba—with a trace of lilac on the base of the lip—aurea, and several of the very fine gigantea. They had been grown in the Mexican house, in full sun.

A Cattleya house was gay with flowers, including a lot of C. Mendelii, Mossiæ and Warscewiczii, one enormous form of the latter having a lip which measured over three inches across. A few C. Gaskelliana were already out. There was a batch of Lælia tenebrosa in flower, but L. purpurata was mostly over, though one very fine dark form was noteworthy. Lælio-cattleyas made a fine show, noteworthy among them being the fine L.-c. Canhamiana alba, with white sepals and petals, and an intense crimson lip, L.-c. Lady Wigan, light and dark forms of L.-c. Martinetii, L.-c. Schilleriana Stelzneriana, which has been here over 20 years, and two plants of L.-c. eximia, still one of the best and richest-coloured forms. One of these had a remarkable abnormal flower, the right-hand half of the lip being replaced by a petal-like half, while the ordinary petals and lateral sepal on the same side of the flower was missing. The two halves of the lip were as sharply defined as if they had been cut out and stuck together. Here were also in flower the pretty little Epicattleya radiato-Bowringiana, bearing spikes of nine and six flowers, Epidendrum atropurpureum Randii, Brassavola Digbyana, two plants of the remarkable Bulbophyllum barbigerum, one bearing five fine spikes, and B. Dearei.

The next house contained a lot more Cattleyas in bloom, some fine

plants of Epidendrum prismatocarpum, and a nice lot of Sobralias, S. Sanderi being over seven feet high. S. leucoxantha had ten flowers out, with numerous buds to follow. S. × dellensis, raised here from the preceding crossed with S. Lowii, is a very fine plant. The handsome S. xantholeuca was also in flower. Suspended from the roof were eight healthy plants of Mormodes luxatum, grown from two bulbs received in 1885. One good spike was pushing. Here was a plant of the old Renanthera coccinea, not in flower.

In the Calanthe House the plants were growing finely, and included, among others, a fine lot of C. Regnieri, some 50 or 60 C. × Harrisii, and a lot of C. × Baron Schröder, both light and dark forms. These make a great show at the proper season.

We now come to a small range of Cool houses, in the first of which we noted about two dozen Epidendrum vitellinum in flower, these having been here for over 20 years. The next was an Odontoglossum house, and contained a lot of bloom, including some good O. Pescatorei, and we noted a healthy little batch of the unique O. P. Veitchianum, though none were in bloom. Many of the choice named forms of O. crispum were out of flower, but we noted the fine O. c. Thompsonianum, a very large, fringed, blotched form, O. c. Rex, the beautiful O. c. Reine des Belges, and numerous unspotted forms. The original plant of O. × excellens, which was purchased in 1884, and appeared at the Orchid Conference in the following year, bore a spike of twelve beautiful flowers. The beautiful O. luteopurpureum Vuylstekeanum bore two spikes, the best with 13 flowers, while a second plant bore a good pod. The remarkable O. × Coradinei mirabile was also in bloom, with O. cordatum and various others. The original O. × Wattianum and O. × W. Hardyanum were pointed out, neither being in flower, and the latter is said to be a very shy bloomer. The remarkable little Pleurothallis ornata bore several spikes, and we noted also the brilliant Cochlioda Nœtzliana and some good Masdevallia Chimæra. A good plant of Ornithidium coccineum well illustrated the two kinds of growth it produces, but the plant was not in bloom.

The Masdevallia house was gay with bloom, to which numerous forms of M. coccinea and some good M. ignea contributed largely. There were several plants of M. Schlimii, the best having 17 spikes, the brilliant little M. racemosa ; M. Veitchiana, the rare M. amabilis, M. × Gairiana, M. × Chelsoni, the fine M. macrura, M. caudata, M. Wageneriana, M. Reichenbachiana, &c. A large plant of the remarkable Cryptophoranthus Dayanus, not in flower, was pointed out, also the rare little Lælia monophylla, which succeeds well here.

In an Intermediate house were numerous Miltonia vexillaria in flower, both dark and light varieties, one light-coloured form being exceptionally

large. Cypripediums occupied the north side, and here were some plants of C. Fairrieanum. There were also six seedling Odontoglossums (O. × elegans × triumphans Lionel Crawshay), all that remain of fourteen before a slug got at them. The tiny pots are placed in a pan of moss and suspended, being shaded by a piece of tissue paper.

The next house contained a large lot of Coelogyne cristata, including many of the variety alba, of course not in bloom, but this beautiful species is largely grown for cutting. A lot of Odontoglossum citrosmum were suspended from the roof. A batch of Cattleya Percivaliana was thriving here, where they have been for a year and a half, since being imported, a fact suggesting rather cooler treatment for this species than is sometimes given. Lælia cinnabarina was in flower.

Passing through a house of Cool Cypripedes, where Mr. Clark says C. Fairrieanum has been tried, but did not thrive, we came to a small seedling house, containing a lot of seedlings in all stages, and in several cases a great difference in size and vigour between seedlings out of the same capsule was pointed out. There were some interesting crosses, but we must pass them over.

We next came to a house where, among other things, a lot of Vanda teres are grown in full sunshine. Those previously mentioned had been grown here, and a good many still remained in flower. The handsome V. × Miss Joaquim was showing a spike. Epidendrum radicans, trained at the end of the house, was flowering freely and making a show.

Thence we passed into a house of Aërides and allies, containing a fine lot of plants of this now rather neglected group, a good number showing for flower. A plant of A. Williamsii, the white form of A. Fieldingii, was pointed out as having been here since 1888. Saccolabium ampullaceum was in bloom, and two dissimilar forms of Renanthera Imschootiana made a fine display, one very dark form having unusually spreading lateral sepals. Vanda Sanderiana carried a seed pod, a flower having been fertilised, with the idea that seedlings of this very difficult species might grow better if they could be obtained. Four plants of the rare Cymbidium atropurpureum were pointed out as a species very difficult to flower, for the spikes frequently push for a short distance and then go off. Some were now pushing, and a repetition of failure was feared. It once produced a dozen fine spikes, and an odd spike on another occasion, which suggests that the right treatment has not yet been discovered. One plant was once put in a Cool house, where it promptly died. Epidendrum radicans, × dellense, and × O'Brienianum made a fine show here, and Ansellia gigantea was also in bloom.

The Mexican house contains a fine lot of Lælias, including all the known varieties of L. anceps. The original variety Schrœderæ was pointed out, and

the pure albino variety alba. Some good seeds of the latter crossed with L. pumila alba were ready to sow, and seedlings of Cattleya Percivaliana × L. anceps Amesiana (Crawshay's var.) were already pricked off. The Thunias, which had been grown in the Dendrobium house, had just been put here to ripen.

In passing through some other divisions we noticed a lot of Pleiones growing well, also various Brassovola Digbyana and other crosses, seedlings of Lælia Jongheana × Cattleya Lawrenceana Vinckeana, the handsome Oncidium sessile in flower, and other good things which must be passed over. It was interesting to see three plants of the rare Cattleya × Lamberhurst hybrid, one of which has a curious history. One of the pseudobulbs decayed, all but a tiny bud at the apex, scarcely the size of a pea. This was laid on a little moss and began to grow, ultimately developing into a good plant.

The Phalænopsis house contained some Phalænopsis amabilis in flower, with a number of good Cypripedes. Some seedlings of C. × Maudiæ were pointed out, also Eulophiella Elisabethæ from the original importation, and Angræcum infundibulare, together with Phalænopsis × casta, P. × intermedia and its variety Brymeriana, the three latter from the Day collection. We saw also the original P. × John Seden, a good healthy plant, and one tiny seedling, obtained from a repetition of the original cross. A small batch of seedlings was obtained, half of which were placed on teak wood, and the rest on rough thorn branches. The former all died, and ultimately those little destructive snails which smell of garlic (Helix alliaria), played havoc with the remainder, and only one survived, but as that is producing healthy roots it is hoped to save it.

Lastly we looked into the Vanda house, which contains a lot of plants of V. tricolor and V. suavis, from the Paterson and other old collections. In fact, the number of old, historical plants is one of the features of the collection at The Dell, for Baron Schröder has secured many of these plants during a long period, and under the care of Mr. Ballantine, and his able lieutenant Mr. Clark, they have been taken good care of. The other prominent feature of the collection is the order and excellent culture which prevail, and the numerous fine specimens, which have been grown on from year to year, are something to be remembered. But such a collection cannot be maintained without casualties, and we were particularly sorry to learn that the charming little Sophrolælia Batemaniana, always a weakly grower, had succumbed. We hope someone will repeat the cross.

Before leaving we had a walk round outside, and noticed on the rockwork a fine lot of the handsome Orchis foliosa coming into flower, while Cypripedium pubescens was about over, with which remark we may close our record of a thoroughly enjoyable afternoon.

THE HYBRIDIST.

ODONTOGLOSSUM × LEO.—Two flowers of a handsome hybrid derived from Odontoglossum Hallii ♀ and O. triumphans Lionel Crawshay ♂, are sent from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks. The flowers are fairly intermediate in shape, the sepals and petals being much less acuminate than in O. Hallii, while the rich deep yellow and copious deep brown blotching most resemble the pollen parent. The very spiny crest recalls that organ in O. Hallii, but the shape of the lip is more like O. triumphans. The two forms are slightly dissimilar, one of them showing rather more of the Hallii shape. It is very handsome, and should develop into a fine thing when the plants become strong.

ODONTOGLOSSUM × NEMESIS.—Three forms of another hybrid are also sent by Mr. Crawshay under the above name. They were obtained from O. Coradinei ♀ × O. triumphans ♂, and are most comparable with O. × dicranophorum, Rchb. f., the natural hybrid between O. Lindleyanum and O. triumphans. From a decorative standpoint they are rather disappointing, having retained too much of the Lindleyanum character, though the flowers are considerably enlarged. The sepals and petals are elongated and rather narrow, two of them heavily blotched with brown on a yellow ground, while the third is only sparsely blotched. The lip is rather narrow, and has a long stalk, the colour being yellow blotched with brown, while the column is rather long and the wings nearly entire. The hybrid flowered for the first time in September, 1906.

POTTING AND WATERING ORCHIDS.

AT the usual fortnightly meeting of the Redhill, Reigate and District Gardeners' Mutual Improvement Association, held on Tuesday, April 2nd. Mr. W. Seaman in the chair, Mr. W. P. Bound, of Gatton Park Gardens, gave a most interesting and instructive lecture on "Potting and Watering Orchids." Mr. Bound's ability as an Orchid grower is well known, and great interest was centered in the meeting, which was largely attended. The lecturer spoke at some length on the use of the Polypodium and Osmunda fibre as a potting medium, but as far as his experience with the latter was concerned, he could not say very much in its favour. The old-time system of using a quantity of crocks for drainage had been superseded by sterilised rhizomes of fern. The latter not only answered as good drainage, but also acted as a food for the plant. The lecturer advocated firm potting for well rooted plants, and a good guide when to pot was when the roots are being emitted from the collar of the plant. Cattleyas, Lælias, Dendrobiums and Odontoglossums were all dealt with in sectional order and at considerable length. A good discussion followed. Mr. W. Rose

was awarded a First-class Certificate for a well-flowered plant of Dendrobium nobile. A vote of thanks to the lecturer closed the meeting.—*Journal of Horticulture.*

ORCHIDS IN SEASON.

SEVERAL beautiful flowers have been sent from the collection of E. F. Clark, Esq., Chamonix, Teignmouth. A form of Lælio-cattleya Dominiana is of excellent shape, having broad rose-purple sepals and petals, and a very richly coloured lip. It was purchased in 1899 as a small seedling, and was thought to be something else until it flowered. L.-c. Hippolyta, Chardwar var., is a large and beautiful form which was raised in the collection, from L. cinnabarina crossed with a very large form of Cattleya Mossiæ, just seven years ago. The petals have an expanse of over six inches, and the colour is orange buff with a band down the centre of a peculiar shade of bluish lilac. The front and side lobes of the lip are rich crimson, and very undulate, and the disc very deep yellow. The plant has now produced a four-flowered spike, and is the second of the batch to bloom. There are two good forms of L.-c. Fascinator, one of which was raised in the collection, the other being purchased as a small seedling. The latter has nearly white sepals and petals, and the throat of the lip deep yellow with a lilac area in front and on the side lobes, the intervening area being rich purple-crimson. The home-raised one is a larger flower, with rosy-lilac sepals and petals, the front part of the lip rich amethyst purple, and the throat deep yellow. The seed was sown in 1899, and eight seedlings appeared, but one of them divided while still in the seedling stage and has been grown on separately. Lastly, there is a twin flowered scape of Paphiopedilum bellatulum, of which the larger lowermost flower is much more suffused with rose than the upper one, giving a peculiar effect.

A richly-coloured form of Paphiopedilum × Gowerianum is sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury. It is a newly-raised seedling from P. Curtisii × Lawrenceanum, and Mr. Rogers remarks that it is a little different from P. × Gowerianum magnificum.

A flower of the beautiful Lælia tenebrosa, Walton Grange var., is sent from the collection of Captain Holford, Westonbirt, Tetbury, by Mr. Alexander. It measures over $7\frac{1}{2}$ inches across its broadest diameter, and its clear yellow sepals and petals render it one of the most beautiful varieties of the species. The lip is about normal in colour, being rich purple in the throat, and veined with similar colour on the side lobes, while a large area on the front lobe is clear white, this colour extending as a narrow margin round the side lobes.

OBITUARY.

DR. MAXWELL TYLDEN MASTERS, F.R.S.—At page 191 of our last issue we briefly announced the death of Dr. M. T. Masters, the highly esteemed editor of the *Gardeners' Chronicle*, and now we are able to give a few particulars about his career, with a portrait. For the latter, which was taken

THE LATE DR. MAXWELL TYLDEN MASTERS, F.R.S.

in 1897, we are indebted to the proprietors of the journal named. Although not specially an Orchidist, in the narrowest acceptation of that term, the career of Dr. Masters has been intimately associated with the history of Orchid culture, from the death of Dr. Lindley, through the long series of years when Reichenbach was the historian of the Order, and for some

eighteen years later, when the work had descended to others. His own writings about Orchids we shall mention presently.

Maxwell T. Masters was born at Canterbury on April 15, 1833, and was the youngest son of Alderman Masters, a well-known nurseryman of that city. He was educated at King's College, London, and after obtaining his degree went to Oxford as sub-curator of the Fielding Herbarium, under Dr. Daubeny. He also practised medicine for some time, commencing at Peckham in 1856, where he commenced the compilation of his *Vegetable Teratology*. From 1855 to 1868 he was Botanical Lecturer at St. George's Hospital, and for some years he was examiner in botany at the University of London, and for the Society of Apothecaries. He became a Fellow of the Linnean Society in 1860, and ten years later was elected a Fellow of the Royal Society.

In November, 1865, Dr. Masters was appointed co-editor of the *Gardeners' Chronicle*—in conjunction with the late Thomas Moore—and almost his earliest work was to prepare an obituary notice of his predecessor, Dr. Lindley, who died on November 1st of that year. This notice appeared in the issues for November 11th and 18th (pp. 1058-9, 1082-3). Masters was then 32, and the connection lasted for over forty-one years. During this period horticulture has seen many changes, and there have been occasions when difficult questions of policy have had to be decided, but the guiding spirit of the *Gardeners' Chronicle* could always be relied upon for a conscientious and unbiassed expression of opinion in the best interests of horticulture. His position was an important one, and his influence in moulding public opinion during this long period must have been enormous. The result may be seen in the position of the *Gardeners' Chronicle* to-day.

Dr. Masters was always a hard worker, and a supporter of institutions of a charitable or educational character. He was a regular attendant at the Ghent Quinquennial meetings for many years, and in 1888 he was decorated with the insignia of the Order of Leopold by His Majesty the King of the Belgians. In the same year he was elected foreign corresponding member of the Institute of France.

Always a loyal supporter of the Royal Horticultural Society, and a valuable ally of the reforming party during the stormy South Kensington period, he has taken an important part in its work. He was a trustee of the Lindley Library, and one of the original members of the Orchid Committee, founded in March, 1889, and for many years a Vice-chairman of the Scientific Committee, over which he has presided since Sir Joseph Hooker ceased his active duties. He was apparently in his usual health at the meeting held on Tuesday, April 30th, which was the last time the writer met him, and on the following day was in his usual place at the office. On Thursday the physician was called in and detected the presence of pleurisy,

which on Friday was followed by pneumonia. Everything possible was done, and hopes of recovery were entertained up to the last, but the end came on Thursday afternoon, May 30th, from heart failure. The funeral took place on Tuesday, June 4th, when a service was held at St. Stephen's Church, West Ealing, and the remains were subsequently cremated at Woking. Thus terminates a highly useful and honourable career, and it may safely be said that the memory of Dr. Masters will be cherished while horticulture lasts. The deceased leaves a widow and two daughters to mourn his loss.

Dr. Masters was the author of numerous botanical works, though very few of them relate directly to Orchids, and to these we must confine our remarks. There are three in the Journal of the Linnean Society, the first entitled "On a peloria and semi-double flower of Ophrys aranifera" (viii. pp. 207-211), read June, 1864. In December, 1865, followed another. "On a double-flowered variety of Orchid mascula" (ix. pp. 349-355, tt. 10, 11). The third, read November 18, 1886, is entitled "Floral Confirmation of the genus Cypripedium" (xxii. pp. 402-422, t. 20).

The earliest reference to Orchids that we know of appeared in 1857, in a short pamphlet issued when Dr. Masters was at Oxford. It relates to Ophrys apifera, and runs :—"Writing to my father on the subject of the Bee Orchis, G. Chichester Oxenden, Esq., of Broome Park, Kent, remarks: 'For forty years of my life a certain field on this estate was under the plough ; after this it was laid down for grass, and the third year after it was thus laid down there appeared in it at least a hundred Bee Orchises, more, in fact, than existed in a circuit of five miles round.'" (See *Phytol.* 1857, p. 112). The circumstance appeared remarkable, but very little was known about seedling Orchids then, and the inference to-day would be that the seeds were sown with the grass.

There are numerous references to Orchids in his *Vegetable Teratology*, published in 1869, and the study has been extended in numerous scattered papers in the *Gardener's Chronicle* since. But his knowledge and love of Orchids were much greater than would appear from his published writings, and as Editor of a journal commenced under the auspices of the illustrious Dr. Lindley few men have had more of the literature of Orchids through their hands.

GYMNADENIA CONOPSEA ECALCARATA.

A VERY interesting form of Gymnadenia conopsea has been sent to Kew by J. E. Bode, Esq., Charterhouse, Godalming, the flowers being both pure white and spurless. It was found among some white forms of the species, which possessed the normal long slender spur, and it is remarked that it was seen in the same place last year. It agrees in structure with the

variety ecalcarata, Rchb. f. (*Rchb. Fl. Germ.* xiii.-xiv. p. 115), which was based upon Orchis peloria, Lam. (*Encycl. Meth.* Suppl. iv. p. 179), a plant described as long ago as 1816. It was sent to Lamarck by M. de Foucault, Inspector of Forests, who found it in a meadow in the environs of Villers-Cotterets, in the Department of Aisne, France, growing among "Orchis conopsea," as the plant was then called. Lamarck observed that is resembled O. conopsea perfectly in habit, form of leaves, disposition of the flowers, as well as in their colour and fragrance, and was probably only an accidental variety of it. The one sent by Mr. Bode agrees equally well, except that the flowers are pure white. Thus it is a spurless condition of G. conopsea var. alba, with which it was found.

A spurless form of Orchis maculata was found at Corsham, near the eastern end of the Box Tunnel, in July, 1889, and another at Poston, Peterchurch, Hereford, in June, 1893. R. A. R.

CALENDAR OF OPERATIONS FOR JULY.

By W. P. BOUND, Gatton Park, Reigate.

THE principal work this month is to see that all the houses are kept well charged with moisture, and the inmates free from insect pests. Much vigilance is necessary, both to see that the plants are clean and also that the growths are not retarded in any way. It is a very good plan to turn the houses over periodically. One can easily imagine that all is well till a turn-over takes place, when it is often found that insects have raided a growth or growths, which could not be observed from the pathways. I consider time well spent in turning over the plants as often as possible, and when doing this the young growths may be tied and roots guided to come to the compost instead of going over the pots. Washing the pots also gives the general appearance of the house that of being smart and well kept. Although I know that many consider the greening of a pot helpful, I much prefer to have all pots clean.

EPIDENDRUM PRISMATOCARPUM.—This grand old Orchid will soon be out of flower, and any plants that require doing up should be attended to soon after the spikes are removed. It is not desirable to disturb them often, but when the material has become soured and worn out, they should be shaken out and repotted, otherwise deterioration will soon be apparent. When this is done let the plant be well overhauled, removing any back leafless bulbs, then the plant will go for several seasons with just an annual resurfacing. The compost should consist of two parts of very good fibrous peat to one part of sphagnum, with some sand and small crocks added. A good drainage is essential, filling the pots rather more than one-third of their depth. Pot moderately firmly, keeping the base of the leading growth and the surface of the compost about level with the rim of the pot.

Those that have been disturbed will not require much water till the new roots have taken good hold of the compost. At no time do they require water till they have become fairly dry. Afford them a position in the Intermediate house, choosing one that is fairly light. Those that do not require potting will be benefited by having some of the surface material removed and fresh added for the new roots to enter. One important factor towards success in growing this fascinating species is to see that the quarters given are buoyant, as they resent a close and stuffy atmosphere.

DENDROBIUM thyrsiflorum, densiflorum, Farmeri, and most of the long-bulbed section, such as D. fimbriatum, and moschatum, will have their growth sufficiently forward to enable any repotting necessary being done. A compost of good peat and sphagnum in equal parts, with some sand and small crocks, should be used. Give a good drainage of rhizomes, over a few crocks, and pot firmly, keeping the compost level with the rim of the pot. These are very beautiful, but they are often sadly retarded by having a host of back bulbs, especially D. thyrsiflorum and D. densiflorum. It is most desirable to remove any beyond three behind each lead, and when plants are being overhauled cut them out freely, and when being potted cut away the rhizome from which the bulbs have been removed. Place them in the stove to finish up their growths; afterwards they are best suited when removed to a rather cooler and drier house. Water carefully till root action is very pronounced, after which a liberal supply should be given till the new pseudobulb is thoroughly made up.

D. chrysotoxum and suavissimum may also be potted in the same material, using non-perforated pans. These should be given a place where they have much light, in about Cattleya house temperature, so that the growths made may be very firm. Soft, immature growths are most difficult to flower, and my experience has been that no amount of ripening afterwards ever fully makes up for the loss sustained through being grown in too shady and too limited a house. When growing freely keep them well supplied with water, at other times only water when they become dry.

D. Parishii and primulinum will both be ready for potting this month, and the same treatment given to D. chrysotoxum will be found very suitable, The rotting of the new pseudo-bulb so often seen in D. primulinum during the winter months is due more or less to its being developed in a hot shady house: the growths made in the Cattleya house may be shorter, but are much firmer in texture and better able to resist the evil effects of our dark, dull winters. Neither of these species require much water at any season.

D. Brymerianum will also be ready for potting during this month. Use the same compost, and ordinary pots, giving a drainage of one half of their depth. This extraordinary species does not like being disturbed, so if

the compost is in a sound state do not repot, but give fresh surface material. Grow them in the stove, giving them copious supplies of water when growing, as this variety never likes to become dry at the root. After the growths are completed a rest in the Intermediate house will be desirable; in fact they can remain there till the growths start again next season.

D. chrysanthum will by now have completed its growths in the stove, and will be benefited by being removed to the Intermediate house till the flower buds are pushing. The change of temperature will be enough to bring about the desired rest. Water should still be freely given.

The exquisite little D. Loddigesii is now growing, and being practically a surface-rooting variety, shallow receptacles are best. It is not advisable to disturb them often, but if the compost is sour or worn out, repot, using the same compost as given above, otherwise surfacing will suffice. An aid to potting this little gem is to have some short copper wire pegs, and bring the growths down to the compost. When they are allowed to grow upwards they do not make such progress as when the base of each growth is close to the material. When in active growth they should be kept well supplied with water; frequent overhead sprayings will also be very helpful. Give a position in the stove where the morning and evening sun can reach them.

DENDROBES FROM CUTTINGS.—Many of these will by now be quite forward enough for potting up. Use small pots and a mixture of equal parts of peat and moss that has been passed through an inch sieve, mixed with some coarse sand. Grow them on as quickly as possible in the hottest part of the stove, and towards the end of August they will be benefited by removing them to rather lighter quarters and where the humidity is not quite so great, this bringing about a partial ripening before the advent of the dull days. I do not advocate giving them much check to harden them, preferring to get as large a plant as possible the first year; yet when they are grown in a very shady hot house it is desirable to solidify them a little.

Vigorous young plants of Dendrobium, either seedlings or cuttings, that after having well filled their pots with roots, and made one growth, show signs of again growing away, may be greatly assisted in making larger bulbs by being potted on. This most often applies to plants in 4 and $4\frac{1}{2}$ inch pots that were potted in the spring from 2 and $2\frac{1}{2}$ inch pots. It is not often that plants that have flowered this season are ever forward enough in growth for this to be done, neither do I think it advisable for plants in larger pots, but young stock is invariably earlier and quicker in growth, and I have many times found much good accrue from potting-on strong young plants during the early part of July.

ODONTOGLOSSUM HOUSE.—Many plants will now be ready for repotting or surfacing, using compost as given in the April Calendar. Among them

are O. triumphans, O. luteopurpureum, O. cirrhosum, O. Hallii, some of the early-flowered O. crispum, and many of the hybrids. When it is essential to thoroughly shake a plant out at this season, in order to give it a fresh start, more than ordinary care must be exercised to see that it is kept well sprayed over and heavily shaded, as we now expect very hot and bright weather.

Much can be done towards increasing stock of good varieties by cutting away the leading bulb when the new growths are about two inches high. This should be done carefully, working out as many as possible of the roots attached to the leading bulb. Pot lightly in a small receptacle, using a compost of equal parts of peat and moss. When the roots have well filled the pot, give it a shift into a larger size, using the compost previously advised, and pot much firmer. I have many times found the young break has developed into a bulb, even larger than the one cut off with it. When this is done do not disturb the old plant till a new break is made, also keep it well on the dry side. It is very necessary to see that this house is kept well charged with moisture. In situations that are very dry, and where the structures are lofty and airy, quite late syringings will be extremely helpful at this season. Also see that the ventilators are kept well open. We never shut off the top or bottom ventilators at this season. Young growths breaking away or developing in a buoyant atmosphere have much more substance and texture, consequently the foliage will not break over so easily, and the general appearance of the house will be enhanced. Few things are more annoying than to see the foliage broken over an otherwise well-grown plant. Those plants that are lying dormant should be allowed to become fairly dry at the root before more water is given.

ONCIDIUM CONCOLOR will now be growing away and potting may be accomplished forthwith, using a compost of peat and sphagnum in equal parts, with some sand and small crocks. Ordinary pots, provided with holes for suspending, are good receptacles, filling them nearly half full with rhizomes. This is a beautiful species, yet rather troublesome to keep in vigorous health for many years. No doubt its floriferous habit has much to do with its deterioration, together with the many back bulbs usually seen. When repotting take away all those not required, two behind each leading one being ample. No plant should be allowed to flower if it has not made a fairly good bulb. Afford a position in the warmest part of the Cool house. Water should be sparingly afforded for some time after potting.

COLAX JUGOSUS.—Another beautiful species will be ready for potting when the young growths have made a fair start, using a compost of two-fifths peat, the same of sphagnum, to one of leaf soil, with some sand and small crocks. This plant grows well with us in the Cool or Odontoglossum house, treated in the same way as Odontoglossums.

CŒLOGYNE PANDURATA.—The extraordinary colouring of the flowers of this fine Orchid always commands admiration. It is now growing apace, and should be kept well supplied with water. When new roots are being emitted is the season when potting should be done. This is another Orchid that seems to me to require frequent propagation, in fact I know that good results can be obtained that way, and the plants kept in comparatively small pots. The stock is also quickly increased. After the plant has flowered the new growth soon emits collar roots, and that is the best time to propagate. Cut it off with one or two bulbs, work out as many as possible of the roots attached to the severed bulb or bulbs, potting up the leading part and the back part separately. My experience has been that the leading part, when relieved of the back bulbs, grows much stronger, and the back part soon makes a new lead, and in a year or two is quite a good plant. The quarters afforded should be the hottest and shadiest part of the stove, where they can be freely syringed, and the compost as given for Cattleyas will be very suitable.

HYBRID ODONTOGLOSSUMS.

MONS. Boppe's remarks in the June issue, at p. 190 need a reply. He omits to put the date of my statement regarding success in raising blotched crispums. When I wrote that, in last November, in my paper upon "Hybrid Odontoglossa" (*R.H.S. Genetics Conference Report*), there had been *very little* success published or was even privately available, but since then there have been several additional important links in the chain of evidence, and I am more than pleased to see that such advances have been made. Very fine forms have been shown at the R.H.S. Temple Show by Messrs. Charlesworth, Linden, and Sander since that date, and I look forward to seeing many more, and, I hope, even finer forms, as such an excellent start leads one to hope for such a result.

Time will give Mons. Boppe the reply he asks for respecting seedling spotted Odontoglossum nobile, and as to success herein, it will only be in the hands of very few fortunate raisers, for good spotted O. c. nobiles are rare. Mons. Boppe evidently has tried to raise spotted forms of it, and it would be exceedingly interesting if he will tell us how many he *did* raise, and give us all particulars.

If, as I understand him, he tried to raise them, and only bloomed white ones, he has his own proof that the spotting is not that of a true species, otherwise it would reproduce itself from seed.

Where the colour of the blotched ones comes from is equally well answered, as in crispums. I will ask Mons. Boppe a question: "Why should we assume that they are true species?" I hope he will be able to reply to this.

DE B. CRAWSHAY.

ODONTOGLOSSUMS FROM LOOCHRISTI.

WE have now pleasure in giving figures of the three handsome Odontoglossums for which M. Ch. Vuylsteke received First-class Certificates at the recent Temple show, these being reproduced from a photograph taken by Mr. F. W. Rolfe, which represents the flowers about natural size.

O. × GANDAVENSE (fig. 23) is said to have been obtained from O. ×

Fig. 23. O. × GANDAVENSE. Fig. 24. O. × EXIMIUM VAR. KING OF ENGLAND.
Fig. 25. O. × CERTIFICUM.

ardentissimum × Vuylstekeæ, and has broad sepals and petals, the greater part of each being occupied by a large blotch of a peculiar dull violet purple, leaving the apex and margin white. The lip is remarkably broad, and is white in front, blotched with violet purple on the basal half. The influence of O. Pescatorei is clearly traceable in the shape of the lip and of O. Harryanum in the crest. It is of excellent shape and novel in colour.

O. × EXIMIUM VAR. KING OF ENGLAND (fig. 24), derived from O. × ardentissimum × O. crispum, is a very richly-coloured variety, the greater part of the white ground colour being largely obliterated by nearly confluent claret-red blotches, those on the lip being rather more brown. The flower was rather past its best when taken, which accounts for the foreshortening of the dorsal sepal.

O. × CŒRULEUM (fig. 25) is a very beautiful hybrid of unknown origin, though we suspect that O. × ardentissimum is in some way concerned in the parentage. It is of moderate size, but of excellent shape, and the markings on the segments are of rather brighter shade of violet purple than in O. × gandavense. The markings on the lip are rather darker in colour. These two hybrids attracted universal attention at the Temple Show by reason of their novel break in colour, and all were greatly admired. M. Vuylsteke must be congratulated on three such sterling acquisitions.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on June 11th, when there was a very good display of Orchids, the awards consisting of seven Medals, one First-class Certificate and one Award of Merit.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), staged a choice group of Odontoglossums with the brilliant Cochlioda Nœtzliana, a Silver Flora Medal being awarded. It contained two plants of the handsome Odontoglossum × Leo (Hallii × triumphans Lionel Crawshay), which is described on another page, a very fine dark form of O. Harryanum, two fine O. × Queen Alexandra, O. × Souvenir de Victor Hye de Crom, differing from the original in having a white ground to the lip, O. × Crawshayanum, O. × bellatulum, O. × Othello, and O. × Urania.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for a very interesting group, containing over forty species and varieties. Specially noteworthy were plants of Saccolabium ampullaceum and the rare orange-coloured S. curvifolium, the delicate little Pleurothallis ornata, with its remarkable club-shaped appendages on the sepals, Restrepia elegans, Cypripedium callosum Sanderæ, C. Curtisii, C. × selligerum majus, Lælia purpurata, forms of Masdevallia Chimæra, the singular M. muscosa, forms of the brilliant M. coccinea and M. ignea, M. caudata xanthocorys, M. tridactylites, and others.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), sent Cattleya Mendelii delicata, a beautiful blush-white form, with a light purple blotch in front of the yellow disc of the lip, and Miltonia vexillaria chelseensis superba, a particularly fine form of the radiata type, which

gained a First-class Certificate. It was a finely-grown specimen bearing four spikes and an aggregate of nineteen flowers.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium Lawrenceanum Purple Emperor, a fine dark form, and Cattleya Mendelii Francis Wellesley, the latter a large and beautiful blush pink form, with yellow lines on the disc and a slight freckling of rosy lilac in front.

G. D. Bailey, Esq., Roseleigh, Burgess Hill, sent a good specimen of Bifrenaria Harrisoniæ.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), sent Cattleya Mossiæ King Edward VII., a fine dark form, a light form of Lælia purpurata, and the striking Cymbidium Huttoni.

Messrs. J. & A. A. McBean, Cooksbridge, staged a very beautiful group, to which a Silver-gilt Flora Medal was given. It consisted largely of well-grown Odontoglossum crispum, including some magnificent white forms, the largest being O. c. Goliath, while the best of the spotted forms was O. c. Empress of India. There were also some good O. cirrhosum, Cochlioda Nœtzliana, a very fine Vanda Sanderiana, some excellent Cypripedium bellatulum, and other good things, with well-grown examples of Cymbidium Lowianum, Lælia purpurata and Oncidium macranthum at the back, the latter flowering in great profusion.

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Flora Medal for a very fine group, containing some good Phalænopsis amabilis Rimestadiana, Miltonia vexillaria, Thunia Marshalliana and T. × Veitchiana, Cochlioda Nœtzliana, Odontoglossum × Phœbe and var. magnificum, with other good Odontoglossums, the beautiful *Zygopetalum* × Roeblingianum, *Z.* crinitum, some profusely-flowered Promenæa xanthina, Phragmopedilum caudatum, Trichopilia coccinea, Dendrobium atroviolaceum, Oncidium phymatochilum and others, Lælio-cattleya Canhamiana alba, a finely-flowered Aerides Fieldingii, the rare Javan Platyclinis cornuta, Acanthophippium javanicum, the remarkable Indian Cryptochilus sanguinea with its tubular flowers, and other interesting species.

Messrs. Hugh Low & Co., Enfield, received a Silver Flora Medal for a fine group, consisting largely of Cattleya Mendelii and C. Mossiæ, among the latter being some good white forms, and C. M. Queen of Denmark, having the greater part of the lip deep orange yellow, other fine things being C. intermedia alba, Lælia purpurata Lowiæ, a pretty light-coloured form, a good batch of Vanda teres, two good Cœlogyne Massangeana, Dendrobium Bensoniæ, Calanthe veratrifolia, &c.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a fine group, containing a fine lot of the handsome and variable Lælio-cattleya Canhamiana, some good Phaius hybrids, among which P. × Phœbe and P.

× Cooksoniæ were conspicuous, the handsome Maxillaria Sanderiana, a fine Vanda cœrulea, a fine specimen of Dendrobium Falconeri, Brassia verrucosa, a handsome Odontoglossum × crispo-Harryanum, O. cordatum and other good Odontoglossums, Cypripedes, &c.

Messrs. Stanley & Co., Southgate, also received a Silver Flora Medal for a fine group of well-grown Cattleya Mossiæ, including many large and richly-coloured forms. C. M. Fieldiæ is a beautiful white form, with chrome yellow markings on the lip's disc, in front of which are a few pale purple lines.

Messrs. James Veitch & Sons, Chelsea, sent the handsome Sobralia × Veitchiana and two good Brassolælia Digbyano-purpurata.

At the meeting held on June 25th, there was again a fine display of Orchids, and the Awards consisted of five Medals, one First-class Certificate, two Awards of Merit, two Botanical Certificates, and one Cultural Commendation.

Captain G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), staged a choice group, to which a Silver-gilt Flora Medal was given. In the centre was a noble specimen of Odontoglossum crispum, which had been grown from a single bulb, and now bore twelve spikes with an aggregate of eighty-eight flowers. It received a Cultural Commendation. Other noteworthy plants were O. c. Zoroaster, having rosy lilac flowers spotted with purple, Lælia tenebrosa Westonbirt var., a fine very dark form, the beautiful L. t. Walton Grange var., having clear yellow sepals and petals, and a white lip, with a purple throat and some purple veining in front, Lælio-cattleya Herode, together with flowers of Sobralia macrantha alba, S. Holfordii, S. × Veitchii, and S. × Amesiana.

The Hon. Walter Rothschild, Tring Park (gr. Mr. Dye), sent a fine plant of Lissochilus giganteus, bearing a spike about seven feet high, with about thirty flowers, a First-class Certificate being awarded. He also received a Botanical Certificate for the curious Malayan Plocoglottis Lowii.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), sent a pretty little group, including a fine specimen of Cryptophoranthus Dayanus, Maxillaria ochroleuca, Barkeria spectabilis, bearing many spikes of large white and rosy flowers, &c. An Award of Merit was given to Cirrhopetalum gracillimum, bearing umbels of pretty reddish purple flowers, with very narrow lateral sepals, and a Botanical Certificate to the rare Hartwegia purpurea.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for a very interesting little group, containing the pretty Saccolabium ampullaceum, Cypripedium Curtisii viride,

Lælio-cattleya Endymion (L. tenebrosa × C. Gaskelliana), Oncidium macranthum, O. Kramerianum, the graceful little Pleurothallis Barberiana, Stelis tristyla, Miltonia vexillaria, Masdevallia Chimæra, M. Chestertoni, M. Carderi, M. radiosa, M. triaristella, M. × Stella, &c.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent Lælio-cattleya C. G. Roebling, Glebelands var., a beautiful white form with the front of the lip ruby-purple, margined with white.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), sent the handsome Odontoglossum × Wilckeanum H. S. Goodson, bearing a strong spike of cream-white flowers, heavily blotched with brown, the sepals being almost suffused with this colour.

J. Wilson Potter, Esq., Elmwood, Croydon (gr. Mr. Young), sent Cypripedium × Wiertzianum, Wilson Potter's var., a very fine form.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), sent Odontioda Bradshawiæ, Walton Grange var., a finer form than the original, and bright red in colour.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), sent the exceptionally fine Odontoglossum Pescatorei Grand Duchess, and a good form of O. crispum.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Lælio-cattleya Hippolyta Prince of Orange, a very richly coloured form, and L.-c. Miss Leese (L. tenebrosa × C. × William Murray), having pale lilac sepals and petals, and a purple lip, becoming rose-coloured in front.

Miss Willmott, Warley Place, Great Warley, Essex, sent a fine specimen of Sobralia × Veitchii, Warley var.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a large and very handsome group, to which a Silver-gilt Flora Medal was awarded. It contained a large number of Lælio-cattleya Canhamiana, both with white and rosy segments, the two being grouped separately, with another group of L.-c. Fascinator at the end, while the back was made up of beautiful sprays of Phalænopsis amabilis Rimestadiana, Oncidium macranthum and others. There were also a number of good Odontoglossum crispum, several of them seedlings with spotted flowers, forms of O. × Wilckeanum, Warscewiczella discolor, Cirrhæa viridis, a good example of Lacæna bicolor, with waxy white flowers, Ornithocephalus grandiflorus, some good Cattleya Mossiæ, &c., with a fine series of hybrids.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a good group, containing the handsome Trichopilia coccinea, Cochlioda Nœtzliana, Aërides Fieldingii, Cypripedium callosum Sanderæ, Maxillaria rufescens, Promenæa xanthina, Masdevallia × Bocking Hybrid, and other good things. An Award of Merit was given to a good example of Cœlogyne asperata.

Messrs. Hugh Low & Co., Enfield, also received a Silver Banksian Medal for a fine group, containing numerous good forms of Cattleya Mossiæ, white and coloured, Cypripedium callosum Sanderæ, C. × Maudiæ, some well-bloomed Oncidium macranthum, the rare Cirrhopetalum Thouarsii, Odontoglossum × loochristiense, and others, Masdevallia Peristeria, &c.

Mr. W. Holmes, The Gardens, Hey House, Bolton, sent Cypripedium × Euryale.

Messrs. J. & A. A. McBean, Cooksbridge, sent two fine Odontoglossum crispum, Cattleya Mossiæ Reineckeana and C. M. Wageneri, and a fine form of Cattleya Mendelii.

Messrs. Stanley & Co., Southgate, sent some good distinct varieties of Cattleya Mossiæ, one, called Sunbeam, having white flowers, with a slight purplish marking on the lip, and another called heliotropium, being white, slightly suffused with lavender.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING was held at the Coal Exchange, Manchester, on May 16th, this concluding the Society's year, and it brought together a good display of plants. The awards consisted of eleven Awards of Merit, one First-class Certificate, and one Silver Medal. The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. Ashton, Cowan, Cypher, Duckworth, Parker, Rogers, Sander, H. H. Smith, P. Smith, Stevens, Thompson, Thorpe, Upjohn, Warburton, Walmsley, Ward, Williamson and Weathers (hon. sec.).

W. Bolton, Esq., Warrington (gr. Mr. Cain), received a Silver Medal for a choice group, and an Award of Merit for Odontoglossum × loochristiense Boltoni, a very beautiful form.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), received Awards of Merit for Odontoglossum crispum Rogersoniæ and O. × Fascinator.

H. Whateley, Esq., Kenilworth, exhibited a few good forms of Odontoglossum crispum, one of which, called Kenilworth Beauty, received an Award of Merit.

R. L. Overton, Esq., Neston, exhibited two forms of Lælia purpurata.

Mr. John Robson, Altrincham, sent a few choice things, receiving a First-class Certificate for Cattleya × Thayeriana alba, and Awards of Merit for Odontoglossum crispum Queen of Spain, O. vexillarium Robsoniæ, and O. × Rolfeæ × O. crispum Graireanum.

Messrs. Hugh Low & Co., Enfield, received Awards of Merit for Cattleya × Parthenia Prince of Wales, and Lælio-cattleya Dominiana Low's var.

Messrs. J. Cypher and Sons, Cheltenham, received an Award of Merit for Cattleya Skinneri Fairy Queen, a very pretty pale variety.

Mr. M. Shackleton, Bradford, received an Award of Merit for a good form of Cypripedium niveum.

Mr. John Stott, Radcliffe, sent a good plant of Calanthe veratrifolia.

The Annual General Meeting was held the same afternoon, and it was announced that the honours of the session had been won by W. Thompson, Esq., Walton Grange, Stone, who had gained the highest number of points for exhibits during the year, and who was accordingly presented with the Sander Cup.

For the coming 1907-8 session four trophies are to be competed for. W. Thompson, Esq., offers a Cup, value £15, for the highest number of points gained during the session, and a second Cup, value £5, for the second highest, with money prizes for the growers. Messrs. Sander & Sons offer a Sander Cup for Cypripediums, and Messrs. Hugh Low & Co., Enfield, also offer a Cup for Cattleyas and Lælias (hybrids excluded).

THE first meeting of the 1907-8 session, held on June 13th in the Coal Exchange, brought forth a grand display of Orchids, the room being well filled. The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. F. W. Ashton, J. Cowan, J. Cypher, A. J. Keeling, C. Parker, F. K. Sander, P. Smith, W. Stevens, A. Warburton, Z. A. Ward, and P. Weathers (hon. sec.).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. A. Dalgleish), richly deserved a Silver-gilt Medal for his group. Intermixed with very fine Odontoglossums and Cattleyas were the following good varieties:—Odontoglossum ardentissimum Robsonæ (F.C.C.), the rich O. × A. Warburton's var., O. crispum Mortebeekense, very fine, O. c. Mrs. A. Warburton, the beautiful O. c. virginale White Queen, and Cattleya Mossiæ Queen of Denmark (A.M.). These with good Cypripedium niveum and C. callosum Sanderæ made up a very pretty and effective group.

W. Bolton, Esq., Wilderspool (gr. Mr. Cain), staged a very striking group of about 150 Miltonia vexillaria. The plants were excellently grown, and were awarded a Silver-gilt Medal. One end of the group was relieved by good plants of Cypripedium Lawrenceanum Hyeanum, C. callosum Sanderæ and the hybrid C. × Maudiæ, with a very fine Cattleya Mendelii (A. M.).

J. Leeman, Esq., Heaton Mersey (gr. Mr. Smith), put up a fine group composed of Cattleyas and Lælio-cattleyas, relieved by several good Odontoglossums, which gained a Silver-gilt Medal. The more noteworthy were several fine plants of the beautiful L.-c. Facinator, L.-c. luminosa, and L.-c. Canhamiana Rex, good plants of C. Mossiæ Wageneri and C. M. Reineckeana, with a fine piece of the beautiful Odontoglossum crispum Britannia.

W. Thompson, Esq., Walton Grange (gr. Mr. Stevens), exhibited a very fine Cypripedium bellatulum of good shape and size, densely spotted with dark chocolate (A.M.),

G. W. Jessop, Esq., Rawdon, Leeds, gained an Award of Merit for Dendrobium Parishii var. exquisitum, and a Bronze Medal for a good group of Cattleyas, Lælias, Odontoglossums, &c., with the singular little Promenæa stapelioides.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very effective mixed group, gracefully relieved by good plants of Masdevallia Harryana and M. × falcata, gaining a Silver Medal. Conspicuous among them was a good Cattleya × Empress Frederick, the rare Zygopetalum × Roeblingianum (A.M.), and a very dark Cypripedium × Curtisii.

Messrs. J. Cypher & Sons, Cheltenham, were awarded a Silver Medal for a nice group, including some good Cattleya Mossiæ and Mendelii, Odontoglossums, and others. Specially conspicuous was a good Cypripedium × Mary Beatrice (A.M.), and a fine plant of Lælio-cattleya Martinetii flavescens, with beautiful fawn sepals and petals and a dark purple lip.

Messrs. Hugh Low & Co., Enfield, set up a fine group of Cattleya Mendelii, in the centre of which stood a fine specimen plant of C. intermedia alba (Silver Medal).

Messrs. Armstrong & Brown, Tunbridge Wells, gained both an Award of Merit and a Cultural Certificate for a very good Odontoglossum nævium.

Messrs. A. J. Keeling & Sons, Bradford, staged a nice little group, in which I was pleased to see several of what are known as botanical Orchids, Bulbophyllum, Acroperas, &c. I am told these plants are coming largely into favour again, and indeed they are a welcome relief to the interminable Cattleyas, Cypripediums, and Odontoglossums (Bronze Medal).

Mr. D. McLeod, Chorlton-cum-Hardy, received an Award of Merit for Cypripedium Lawrenceanum McLeod's var. H. T.

OPHRYS MUSCIFERA VIRESCENS.—A green variety of the Fly Orchis, Ophrys muscifera, has been discovered in a small copse at Wye, near Ashford, Kent, by Mr. G. W. Harris, joint discoverer with Mr. H. Walker, of the natural hybrid Ophrys × hybrida in Britain two years ago (*O.R.* xiii. p. 23, fig. 56). In the normal form the antennæ-like petals and the lip, except a white glaucous area in the centre of the latter, are dark purple, but in the present form this pigment is suppressed. It is a case of albinism, and is probably analagous with a green flowered form discovered by Hegetschweiler in Switzerland many years ago (*Fl. der Schweiz*, p. 784). The flowers are preserved at Kew. R. A. R.

ODONTOGLOSSUM × WILCKEANUM ALBENS.

AMONGST the many well-known Odontoglossums there are some which bear more than one name in our numerous collections, but none have been so much hampered by synonomy as this extremely pretty variety, which is of Belgian origin. There were in the eighties, two plants, quite distinct, both of which were called Wilckeanum albens. One was shown by Mr. R. H. Measures at the R.H.S. meeting held on March 24, 1885, and was awarded a F.C.C. This was a paler variety than pallens, almost white, and profusely blotched with cinnamon-brown (*G.C.* 1886, i. p. 76). The word

Fig. 26. ODONTOGLOSSUM × WILCKEANUM ALBENS.

cinnamon distinguishes this plant from the subject of this article. I do not know if Mr. Measures still has this plant. Our subject plant was bloomed by Mons. A. Vuylsteke at about the same time, as it is figured in *Lindenia*. i. t. 35. In due time it was divided, and commenced its travels, appearing unnamed at Protheroe and Morris's in January, 1887, and being bought by the late Mr. H. M. Pollett for 75 guineas. He showed it at the R.H.S. on February 8, 1887, as O. crispum leopardinum, it being awarded a F.C.C. Mr. Pollett in 1899 gave me the original painting of this plant, as certified at the R.H.S., February 8, 1887, from which the coloured figure in his catalogue of 1891 was prepared. This plant was divided, Mr. Pollett

selling one part as Lot 199 in his first sale, held April 7, 1891, for 100 guineas. I believe the buyer was a Belgian trader, who sold it to M. Warocqué. Mr. Pollett sold the other portion privately to Baron Schröder, who still has it ; therefore of the true identity of this plant there can be no doubt, if anyone who owns it under its various synonyms likes to compare blooms in due time.

The plant seems to have kept a very private existence after this till February 14, 1896, when another plant appeared at "P. & M.'s," being bought by Mr. H. T. Pitt for about 75 guineas. This was figured in the *Gardening World*, February 22, 1896, as O. × Wilckeanum Pittianum. I believe Mr. Pitt has still a part of this division of it. He included two plants of it as O. × Wilckeanum Pittianum in his duplicate sale of March 22, 1906.

Its next change was into an O. × Adrianæ, during the early years of the great popularity of this hybrid. I received blooms from a correspondent in 1901, but as this plant afterwards passed privately into another collection, and was correctly named, there is no need to record the temporary alias.

Subsequently a plant was shown by Mr. N. C. Cookson at Holland House on June 25, 1903, as O. crispum Sibyl, its photograph by Mr. H. J. Chapman being reproduced (*G.C.* 1903, ii. p. 37, fig. 16), when it was stated (in error) that it was raised at Oakwood, this being subsequently corrected by Mr. Cookson (l.c. p. 121). Mr. Cookson afterwards restored the plant to O. × Wilckeanum, but retained the varietal name "Sibyl." Plants from this source are in other collections, as O. × Wilckeanum Sibyl, two plants being so named in his "duplicate sale" of May 31, 1904, at P. & M.'s. One also appeared in Earl Tankerville's duplicate sale of March 12, 1907.

This variety even to-day holds its own among its congeners, as its pure white ground, so beautifully marked by deep crimson-chocolate, enhances the beauty of the markings, which are rather out of the common, owing to the fact that the petals are "eyebrowed," in the manner of O. crispum Franz Masereel and Mossiæ ; and when upon a large plant is much finer than the accompanying reproduction, which was taken from a small plant in my own collection, but it shows the peculiarity of the markings equally well. In recording all named varieties of Odontoglossums, as I have now consistently done for twenty-six years, I have observed the constant desire for novelty, which has led some of us to imagine we have a new variety when we really have but an old one. This, of course, only applies to an admired form, the others soon passing into oblivion.

Named varieties are now so numerous, and are constantly increasing, that it behoves us all to try and reduce the tendency in some measure, and

above all to clear up any synonomy that may exist from all or any causes. There is another factor that may prompt us to keep up the system of synonomy, and that is to keep up value, as since Mons. Vuylsteke raised O. Wilckeanum the value of the natural hybrids has fallen heavily, for taken as a body they are inferior to the garden-raised forms, though among these latter I know of only two which have white grounds, whereas there are several among the former, but most of them have been named "crispum." That elastic term has been stretched beyond all reason, but I am glad to say it is being gradually narrowed down.

DE B. CRAWSHAY.

MEXICAN ORCHIDS.

A SMALL collection of Mexican Orchids has been received by W. E. Ledger, Esq.. of Wimbledon, two of which, a Gongora and a Notylia—the species at present uncertain—have just flowered. They were sent by J. L. Hermessen, Esq., Plantacion La Junta, Sanborn, Vera Cruz, together with some very interesting notes, from which, with Mr. Ledger's permission, the following extracts have been made. A good many of the Orchids from this region are known, but it is probable that a careful search among the smaller kinds would reveal some interesting novelties. These notes throw an important light upon the conditions under which some of the species grow, which should afford some useful hints as to their culture. The Mr. Harvey mentioned is a gentleman whose acquaintance our readers have already made.

"The greatest number and the most beautiful of the Mexican Orchids are found at an elevation of between 4,000 and 6,000 feet. At the lower edge, extending upwards 1,000 feet, one finds the beautiful Lælia anceps, in many varieties, ranging from deep rose pink to pure white, with rich purplish crimson labellum, several of the Stanhopeas, the pretty Oncidium ornithorhynchum, O. Cavendishianum, and several others. Then, growing near by, on mossy rocks, occurs Sobralia macrantha, which Mr. Harvey describes as a glorious sight when seen with its thousand reed-like stems, waving gently in the soft mountain air, each stem crowned with a large Cattleya-like flower and many unopened buds. These plants grow associated with a host of ferns, beautiful Lycopods, Selaginellas, Pinguiculas, the pretty Cypripedium Irapeanum, and numerous gems of the Gesneraceæ. One also frequently meets the pretty Lycaste Deppei and the very fragrant L. aromatica, growing in immense masses.

"Going up still higher, the air being appreciably cooler, one comes across trees absolutely covered with masses of the lovely Odontoglossum Rossii, in an infinity of colour, ranging from deep pink to white, with the usual chocolate-coloured markings at the base of the sepals. And higher

again one finds the brilliant Epidendrum vitellinum, and at about the limit of the altitude for the Orchidaceæ one finds in abundance—where the commercial collecting vandal has not intruded—two of the most beautiful of the Mexican Orchids, namely Lælia albida and Cattleya citrina. Occasionally, but not in great abundance, one meets with a pretty Orchid at about 3,000 to 4,000 feet, Chysis aurea, bearing pretty yellowish waxy flowers, but the gem of the genus, C. bractescens, inhabits the lowlands, and is one of the commonest Orchids in our coast woods.

"On what may be termed the coast zone, Orchids are not nearly so abundant as at higher elevations. Here we find Epidendrum Schomburgkii, E. cochleatum, E. ciliare, the pretty and sweetly-scented E. atropurpureum, and another very interesting species having brilliant magenta-pink flowers, and supposed to be E. myrianthum. It grows in immense clumps, at the tops of trees, bearing perhaps forty or fifty upright distichous-leaved stems, crowned with a rather large terminal thyrsoid inflorescence. A curious feature about this Orchid is that it nearly always grows in company with the remarkable genus Coryanthes, of which there are two species here, and Mr. Harvey states that it seems impossible to establish these Orchids in satisfactory cultivation without the aid of ants, as, wherever found growing, the roots appear in the form of a large ball, anywhere from one to two feet in diameter, mixed with an earthy substance —evidently a secretion from the ants—the whole forming a nidus of myriads of these little fiery-mouthed tyrants, which, upon the slightest touch, issue from the mass of roots in thousands, so that it is extremely difficult to collect these Orchids.

"There are two pretty Stanhopeas, one having pale yellowish white sepals and petals, faintly marked with maroon-coloured spots, and deep yellow at the base of the hypochil, with a suggestion of the fragrance of cinnamon, the other having whiter sepals and petals liberally spotted with deep maroon—altogether a very lovely Orchid. Among other curious Orchids is a Brassia, with pale yellowish-green sepals and petals, extending into long tails of three or four inches long, spotted with brown.

"A little lower down, in more open forest, occur immense masses of the Cow-horn Orchid, Schomburgkia tibicinis, with spikes a yard long or more, bearing at the apex six to ten good-sized pinkish-red flowers—a noble Orchid, but inhabited by one of the most ferocious ants known to naturalists, here called the Tiger Ant. On one occasion, when collecting near Vera Cruz, Mr. Harvey was bitten on the finger by one of these ants, and the pain extended up to the elbow, and lasted nearly a day. One has to 'watch out,' therefore, when attempting to collect Schomburgkias. The bulbs are hollow, and shaped somewhat like a cow's horn, except for the two or three rigid leaves at the top, quite horn-shaped, and about twelve

to eighteen inches long in mature plants. These cavities are almost always filled with the venemous insects just mentioned.

"But the glory of our trees in March and April are the masses of Oncidium altissimum, with long arching stems, often branched, and each carrying from 50 to 150 yellow and brown flowers. A little gem is Oncidium iridifolium, a specimen of which Mr. Harvey found on a felled tree last December. It was attached to a very small branch—hardly more than a twig—and was certainly an extremely lovely little thing. There are a number of other Orchids of much less beauty, and some quite insignificant, and only of botanical interest."

A final note by Mr. Hermessen throws a lurid light on the wholesale destruction of Orchids which is sometimes carried on. He remarks:—"I missed the greatest chance I am ever likely to have here of finding some good Orchids when 800 acres of virgin forest were felled, in February and March last, for rubber planting. This ground was all burnt over in May and planted in June. During the past week or ten days it has been my duty to supervise the cleaning of the young rubber on this ground (that is to say the cutting down of the destructive grass and weeds that come up all the time), and it has almost broken my heart to see the numerous charred remains of Orchids (no doubt many of them very rare) on the burnt tree trunks scattered over the ground."

It is here that the danger of the extermination of certain Orchids chiefly lies. Judicious collecting seldom does much permanent harm, as the stock is soon made up again from young seedlings, unless indeed the trees on which they grew are felled indiscriminately. But when the forests themselves are destroyed wholesale, for coffee planting and similar purposes, as above described, the damage is irremediable. The establishment of sanctuaries for the preservation of the wild Orchid flora in certain districts may some day be necessary.

PHAIUS HYBRIDS.—With a view of completing the beautiful series of Phaius hybrids from the collection of Norman C. Cookson, Esq., mentioned on page 188, Mr. Chapman now sends three others. P. × Chapmanii (P. × Phœbe × P. Humblotii) is a very charming thing having salmon-pink sepals and petals, with a pale line near the apex, and a rich rosy purple lip with a large yellow crest. P. × Chapmanii superbus has broader sepals and petals, rather more uniform in colour, while the lip is also darker though not quite so large. P. × Cooksoniæ (grandifolius × Humblotii) has a rather more coppery tinge about the sepals and petals, while the side lobes of the lip are veined with yellow and rich red-brown, the front lobe being purple. P. × Doris, the last of the series, was obtained from the preceding crossed with the pollen of P. × oakwoodiensis, and has very

broad coppery rose sepals and petals, and a reddish purple lip, with a little yellow veining radiating from the orange-yellow lip and a similar mottling on the side lobes. We agree with Mr. Chapman in considering the P. Humblotii hybrids as the best of the series.

COCHLIODA NŒTZLIANA AS A PARENT.

THE remark at page 181 that Cochlioda Nœtzliana cannot be successfully used as a pollen parent is, we are informed, incorrect. Although generally used as the seed parent, it is said that there are seedlings from reversed crosses in existence, but further information is at present withheld. A similar remark applies to Odontoglossum Edwardii, in which connection we may call attention to the record, on page 195, of a capsule of Odontoglossum × elegans crossed with O. Edwardii in Baron Schröder's collection.

ORCHIDS AT KEW.

A NOBLE specimen of the handsome Stanhopea tigrina is flowering freely at Kew, their being four racemes and nine flowers, while other spikes are following on. S. insignis and S. ecornuta are also flowering well. There is a good spike on the rare Vanda Parishii, and near by Angræcum Scottii, and the fine A. Eichlerianum, with Aërides odoratum and A. falcatum Leoniæ. Bulbophyllum barbigerum is producing three fine racemes. Brassia verrucosa is being three spikes, and, curiously enough, four flowers on one spike and three on another have the lips reduced to thread like appendages. The beautiful Sophrocattleya Chamberlainiana is again in bloom, with quite a series of Oncidiums. Other interesting things are the old Scuticaria Steelii, Notylia Huegelii, and Ornithocephalus grandiflorus. The usual showy species of the season are making a fine display.

NOTES.

THE Royal Horticultural Society will hold its Great Summer Show at Holland House, Kensington, on July 9th and 10th next. The Orchid Committee will meet at 11 a.m., and at 1 p.m. the Council will entertain the Committees and other invited guests to luncheon. Silver Cups and Medals will be awarded according to merit, and the general arrangements for the Temple Show will apply as far as possible.

An ordinary meeting will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on July 23rd, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold a

meeting at the Coal Exchange, Manchester, on July 25th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

A figure of the fine group of Orchids shown by Messrs. William Bull & Sons at the Temple Show is given in the *Gardeners' Chronicle* for July 8th (p. 372).

A group of Odontoglossums from the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, is given in a recent issue of the *Gardening World* (p. 395). It is the fine group exhibited at the R.H.S. meeting held on May 14th last.

A flower of the beautiful Lælia purpurata Thwaitesiæ is sent from the collection of R. G. Thwaites, Esq., of Streatham. The sepals and petals are white, the latter being very broad and flat, and the lip is beautifully suffused with bright purple in front of the yellow disc, the apical margin being white.

Two curiously abnormal Orchids are sent from the collection of C. C. Hurst, Esq., Burbage, Hinckley. A flower of Cattleya Mendelii has two opposite sepals and two other segments arranged at right angles to them, but these two additional segments are divided down the middle, the front half of each being lip-like and the back half petal-like, both in shape and colour. The column is narrow and curved. The other is a Lælio-cattleya, and the middle one of three flowers has the lip replaced by a thread-like vascular bundle, an inch and a half long, with a small spathulate expansion at the apex.

ORCHID PORTRAITS.

ANSELLIA GIGANTEA.—*Gard. Chron.* 1907, i. p. 362, fig. 154.

BRASSOCATTLEYA MRS. J. LEEMANN, VAR. RAJAH.—*Gard. Chron.* 1907, i. p. 351, fig. 148.

CATTLEYA × BROWNIÆ, VEITCH'S VAR.—*Journ. Hort.* 1907, i. p. 545, with fig.

CYPRIPEDIUM CALIFORNICUM.—*Garden.* 1907, i. p. 311, with fig.; *Gard. Chron.* 1907, i. p. 418, fig. 171.

CYPRIPEDIUM GODEFROYÆ LEUCOCHILUM.—*Gard. World*, 1907, p. 365, with fig.

CYPRIPEDIUM TIBETICUM. —*Journ. Hort.*, 1907, i. p. 569, with fig.

DENDROBIUM ASHWORTHIÆ, O'BRIEN.—*Bot. Mag.* t. 8141.

LÆLIO-CATTLEYA GOLDEN GLORY.—*Gard. Chron.* 1907, i. p. 357, fig. 152.

MILTONIA VEXILLARIA, *Gard. Mag.* 1907, p. 389, with fig. VAR CHELSEENSIS SUPERBA.—*l.c.* pp. 450, 451, with fig.

ODONTOGLOSSUM × CŒRULEUM.—*Journ. Hort.*, 1907, i. p. 521, with fig.; *Gard. Mag.* 1907, pp. 412, 413, with fig.

ODONTOGLOSSUM CRISPUM HEATONENSE.—*Gard. Chron.* 1907, i. p. 409, fig. 167. VAR. LORD CROMER, *l.c.* p. 352, fig. 149. VAR. PRINCE OF ASTURIAS, *l.c.* p. 353, fig. 150. VAR. SOLUM, *Gard. Mag.* 1907, pp. 411, 412, with fig.

ODONTOGLOSSUM × PHŒBE MAGNIFICUM.—*Gard. Chron.* 1907, i. p. 355, fig. 151.

ODONTOGLOSSUM × VUYLSTEKEI.—*Rev. Hort.* 1907, p. 230, fig. 1.

ONCIDIUM CRISPUM GRANDIFLORUM.—*Journ. Hort.* 1907, i. p. 385, with fig.

ONCIDIUM SARCODES.—*Amer. Gard. Chron.* v. p. 33, with fig.

ONCIDIUM VARICOSUM.—*Journ. Hort.* 1907, i. p. 497, with fig.

PHAIUS BLUMEI VAR. SANDERIANUS.—*Gard. Chron.* 1907, i. p. 343, fig. 2.

PHAIUS × CLIVE.—*Gard. Chron.* 1907, i. p. 343, fig. 4.

PHAIUS × HAROLD.—*Gard. Chron.* 1907, i. p. 343, fig. 1.

PHAIUS × NORMAN.—*Gard. Chron.* 1907, i. p. 343, fig. 5.

PHAIUS SIMULANS.—*Gard. Chron.* 1907, i. p. 343, fig. 4.

PHALÆNOPSIS AMABILIS RIMESTADTIANA.—*Amer. Gard. Chron.* v. p. 56. with fig.

PHALÆNOPSIS DYANA.—*Amer. Gard. Chron.* v. p. 56, with fig.

SOPHROLÆLIA PHROSO SUPERBA.—*Gard. Chron.* 1907, pp. 259, 281, fig. 118.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest* ***will be dealt with in the body of the work***].

W.D.S. A spike of Odontoglossum crispum with eleven flowers of good shape, but apparently not fully developed. If well grown it should be very attractive, as the lip is well marked, and the few spots on the sepals are of the same light cinnamon colour.

E.T. A densely flowered form of Epidendrum oncidioides, Lindl.

X. We passed no opinion whatever upon those Odontoglossum crispum flowers, merely recording the fact that we had seen them. We must decline to open a discussion on the subject, as we did at the time.

J.S. Octomeria diaphana and Stelis tristyla.

H.H.T. Two forms of Ophrys Morio.

Photographs received, with thanks:—M. de W., A.W., D.B.C., H.J.C., W.S.

J.M.B. Received with thanks. Next month.

ERRATA.

Some errors crept into our note last month on the Rosefield collection. The three forms of "Odontoglossum × Fascinator," mentioned at page 181, were natural hybrids, the parentage having been inferred. The "curious seedling" mentioned (p. 181) was from O. crispum × O. c. Crawshayanum. O. crispum White Empress (p. 182) received the Second Diploma from the R.H.S.

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Fig. 1. **Fig. 2.** **Fig. 3.** **Fig. 4.** **Fig. 5.**

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Fig. 3.—B pattern, legs fully extended to take heavy specimen plant, swing top tilted to give good front view, maximum height.
Fig. 4.—B pattern. Side view showing the greatest angle at which plant can be tilted.
Fig. 5.—B pattern. Maximum height, swing top ¼ tilted.

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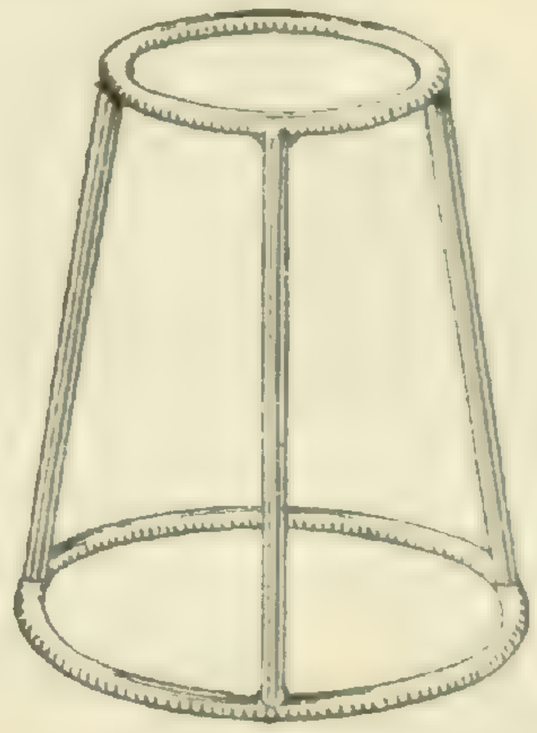

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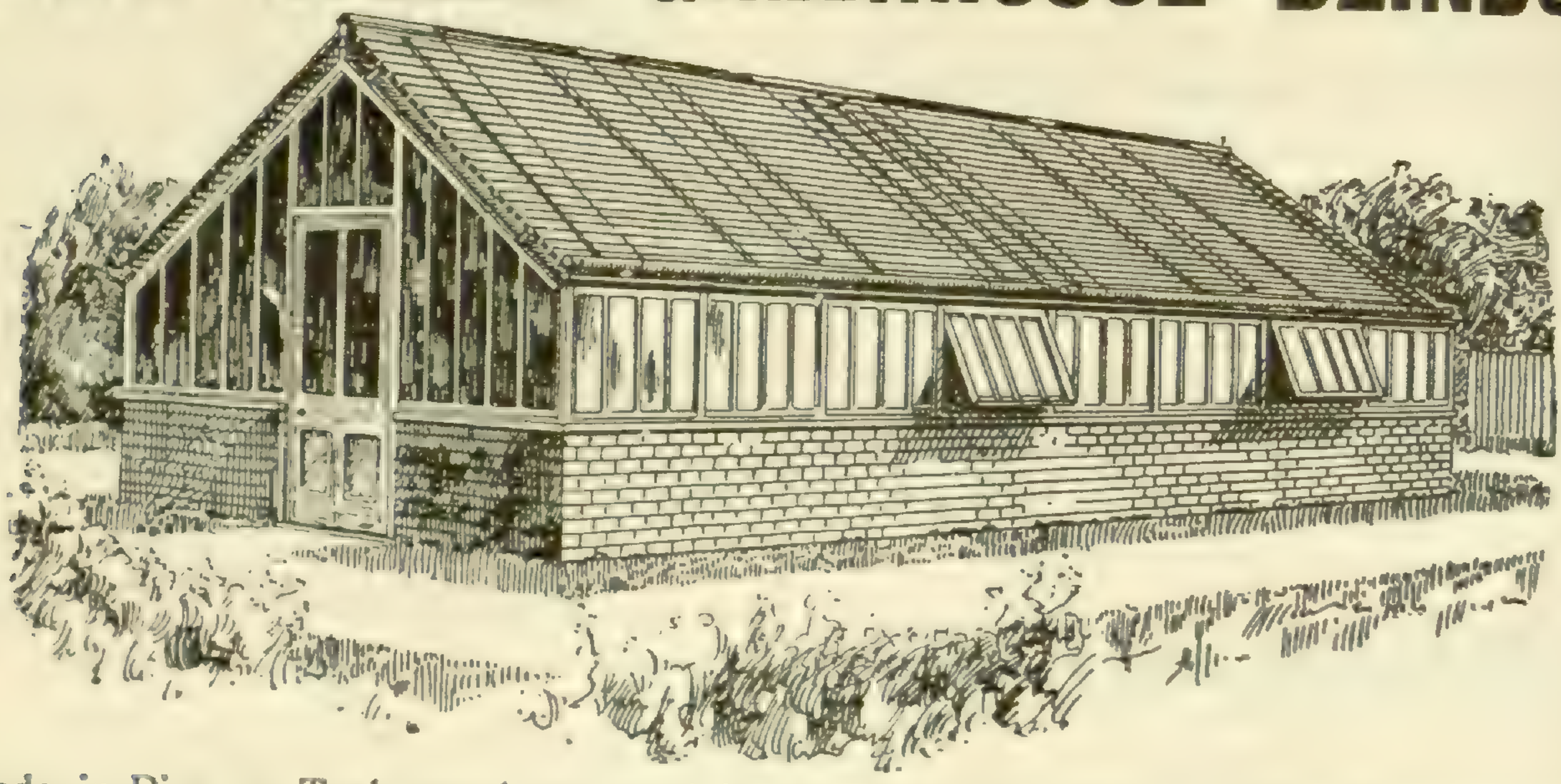

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An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *AUGUST*, 1907. [No. 176.

ORCHIDS AT CHESSINGTON, STREATHAM.

FOUR years ago, under the title "A Hybridist's Collection," we gave an account of the collection of R. G. Thwaites, Esq., of Streatham (*O.R.* xi. pp. 257-260). Since that time remarkable progress has been made, particularly among the Odontoglossums, which have now stepped into the front rank. They are present in every stage, from the tiniest globules right up to those showing spikes, of which latter we saw at least a dozen. There are seven thousand seedlings potted off already, with large quantities in various stages of germination, not yet pricked off, and many capsules following on —a series containing numerous very interesting and promising crosses. They are now raised here with almost the same ease and certainty as Cattleyas, which is saying a great deal. It is unnecessary to add that everything is in the healthiest possible condition; such remarkable success alone affords sufficient evidence.

A good many people still ask how it is done, for the great progress made during recent years has stimulated many Orchidists to try their hand at the work, and some, alas! have only failure to report. Odontoglossums are clearly the coming group, and in view of the general interest in the question we will try to explain a little of the way in which it is done, for after seeing the results obtained in several collections, and noting carefully the general treatment adopted, we think the secret of success can be explained. And the secret is not profound. It consists briefly in knowing what to do, and doing it. It is largely the result of unremitting care and attention—the knack of getting the conditions right and keeping them right all the time, and one can only imagine the amount of enthusiasm and perseverance which has brought about the condition of things seen here to-day. As previously indicated, the hybridist is a lady, Mrs. Thwaites herself, and Mr. J. M. Black, who has charge of the collection, has proved himself an expert in the art of raising seedlings. But to proceed.

The houses are modern structures, built on up-to-date principles, with ample facilities for heating, shading, ventilation, and for securing a genial humid atmosphere, which we think is a matter of the highest importance.

Anyone who has seen germinating Odontoglossums in their earliest stages will realise how a few hours' neglect—nay less—might destroy a whole batch of such microscopic organisms, and they are microscopic when they first begin to swell and become green. On entering the houses one immediately notices the double shading, consisting of two lath roller blinds arranged at right angles to each other, and at several inches distance from the glass. The sunlight only reaches the glass in small squares. There is thus a free circulation of air between the blinds and the glass, and on placing one's hand beneath the latter it is found to be quite cool. All risk of burning is thus eliminated. Abundance of moisture is secured by damping all available surfaces as necessary, and by spraying. The stages on which the plants stand are open, and the solid stages are fixed at a considerable distance (over a foot) beneath, close to the pipes. Ample ventilation is provided, and the heating arrangements are adequate, and are utilised as necessary.

Everything is under complete control, and all extremes are avoided. The atmosphere of the houses is cool and humid, without cold draughts and without stuffiness. One instinctively feels that the conditions are right. We remarked that it felt "like a house in which the very best Odontoglossums were grown, but just a shade warmer and moister," and to this Mr. Black assented, adding that he did not like to see the temperature much below 60°. Compost, good fibrous peat and sphagnum, with a few leaves, but Mr. Black would not recommend much of the latter, except to those who thoroughly understand the watering. But we must pass on, and would advise anyone who is not satisfied with his own success to note carefully in what respect his treatment differs from that described above, always remembering that the result is the thing to aim at. And secure all the light possible in winter.

We will now give particulars of a few interesting crosses noted, but these are only a small selection of those seen. The first house visited contained a beautiful series of seedlings of various ages, and our first note refers to a batch of Odontoglossum × Adrianæ × Pescatorei, three years old. Next came a batch of Cochlioda vulcanica × O. Harryanum, about a year younger, a particularly interesting cross. We also noted the same Cochlioda (we place the seed parent first) crossed with O. crispum and with O. Uroskinneri. We saw quite a lot of seedlings from C. Nœtzliana, the pollen parents including O. Hunnewellianum, O. × Adrianæ, O. Harryanum, O. crispum, both white and blotched forms, O. Rossii rubescens, and, what was specially interesting, Oncidium Gardneri. The latter bigeneric cross is not the only one, for a batch of Oncidium crispum × Odontoglossum Pescatorei was pointed out, three years old, but very weak growers, also Oncidium tigrinum × O. crispum, another interesting com-

bination. Returning to Odontoglossums, we noted a batch of O. Edwardii, O. Hunnewellianum, O. Uroskinneri and O. Rossii all crossed with O. Pescatorei, plants of the latter being three or four years old; O. sceptrum and O. Pescatorei crossed with O. crispum; O. Harryanum and O. × ardentissimum crossed with O. crispum Poultoni; and seedlings obtained by intercrossing blotched forms of O. crispum.

Passing into another house we noted a beautiful batch of Odontoglossum × Rolfeæ, and counted eleven spikes pushing up. Mrs. Thwaites remarked that the cross was made both ways, both Pescatorei and Harryanum being used as seed bearers, and both were showing for flower. Near by were good plants of O. Harryanum × ardentissimum and Cochlioda Nœtzliana × O. crispum. O. Rossii was bearing capsules as the result of crossing with O. Edwardii, and a good many other capsules were in evidence. A good many examples of O. crispum were in flower, with a few O. luteopurpureum, and the large and handsome O. Pescatorei Grand Duchess, the latter having just been crossed with Cochlioda Nœtzliana as an experiment. A very interesting remark came out in this connection. The only three Odontoglossums which have been successfully crossed with this Cochlioda are O. cirrhosum, O. ramosissimum and O. Edwardii. In all the other crosses (including some not enumerated) it was the seed bearer. Other trials may be made, for a few examples were now in flower. An interesting experiment of another kind was pointed out here. A plant of Charlesworth's form of O. crispum xanthotes, with two old bulbs and a growth, was purchased about a year ago. Some time later the rhizome was cut through to separate the two bulbs, and both have produced a good break, so that there are now three plants, which will be potted separately in due time.

The Odontoglossums have occupied so much space that other things must be dismissed very briefly, but they were treated in more detail four years ago. And they have made much progress since. There are nine houses, largely devoted to hybrid seedlings—in fact it is estimated that over 95 per cent. are seedlings, mostly raised here. The points to which special attention are given include the raising of albino Cattleyas, hybrids of Cattleya Dowiana (aurea), of Brassavola Digbyana, and of Sophronitis grandiflora, and there is a beautiful series of each. A few seedlings of S. grandiflora crossed with C. × Hardyana were pointed out. S. grandiflora and C. Mendelii have been successfully crossed both ways.

In another house seeds of a cross between Sophrocattleya × Doris and Lælia pumila were germinating, and we noted good plants obtained from both C. superba and C. Schilleriana crossed with C. × Hardyana. A batch of thirty or forty seedlings was pointed out in which we have a special interest, for the seed was sent to us by a correspondent, R. M.

Poole, Esq., in Australia, and Mrs. Thwaites kindly undertook the task of germinating it. The cross is Cattleya Mendelii and C. Mossiæ, and should Mr. Poole have been less successful it is hoped that some of the seedlings may be strong enough to take a second journey across the ocean in about a year's time. Two particularly interesting Dendrobium seedlings must also be mentioned. These are from D. atroviolaceum and D. crepidatum, in each case crossed with D. Brymerianum, and their flowering is awaited with great interest.

In another house we saw Lælia majalis × tenebrosa in sheath, with several other things, also L. xanthina × C. Mossiæ Wageneri (a form of Læliocattleya Norba) in flower, together with L.-c. Martinetii and L.-c. epicasta. C. Schilleriana × Schrœderæ was in bud, but some have already flowered, also C. intermedia alba × C. Mossiæ Wageneri. A form of Dendrobium × chessingtonense with cream-coloured sepals and petals and a dark brown disc to the lip was also in bloom. There was also a pod of Miltonia spectabilis Moreliana, but previous ones have contained no seed, so we only mention the fact.

Mrs. Thwaites is certainly one of our most expert hybridists, and we must congratulate her and her able chief, Mr. Black, on such remarkable progress. We hope to record the results hereafter.

ORCHIDS AT COOKSBRIDGE.

THE establishment of Messrs. J. & A. A. McBean has long been famous for its Odontoglossums, and we have heard it said that nowhere in England are they grown better. The other day, through the kind invitation of Mr. & Mrs. Thwaites, of Streatham, to accompany them to Cooksbridge in their motor car, we had the pleasure of seeing them, and found our expectations fully realised. The great majority of the plants are fully established, and their size and vigour are remarkable, while nearly every leaf is perfect. The almost uniform excellence speaks of perfect conditions of culture.

We first entered a house—100 feet long—chiefly devoted to Odontoglossum crispum, and noticed that the span was rather steep, with ample top ventilation and shading, open stages, and tanks for watering at convenient places. The plants are potted in peat fibre and sphagnum moss, and all seemed to be on the dry side, but, as Mr. McBean remarked, it is difficult to overwater so porous a compost. Most of the plants were large sturdy specimens, and remarkably vigorous, a good selection being in flower, showing spikes of corresponding strength, and sometimes two from the same bulb. We counted spikes of twelve and fourteen flowers of great substance. It seemed a very bright situation, rather ample shade being required. We enquired the cause of such vigour, and Mr. McBean

suggested that one important factor was abundance of light in winter. the sea being only about seven miles away, yet the situation not low. Other important matters are the constant attention to the details of temperature, shading, ventilating and watering, the result of long experience.

In this house a few good O. sceptrum were in flower. A plant of O. × mulus bore a pannicle with three side branches and forty-six flowers, fourteen being on the leading branch. A strong O. Pescatorei had thirteen branches and over a hundred flowers, the plant being a picture of robust health. We noted also O. luteopurpureum and a good O. × Ruckerianum.

The next house was parallel to this and of similar size, with openings in the party wall separating them, and looking along we noticed that the leaves were constantly moving with the current of air. Here we noticed a very fine O. crispum with a spike of twenty flowers, there being a side branch near the base, also plants of O. Lindleyanum and O. cirrhosum, one of the latter bearing three pods as the result of crossing with Cochlioda Nœtzliana. Oncidium incurvum was throwing up some fine spikes. There were also four good O. macranthum in flower, with Odontoglossum × excellens, O. gloriosum, and others.

The third house is similar, and on one side we noticed a solid stage over the pipes, covered with breeze for moisture-retaining purposes. In this house a number of good O. crispum were in bloom, including an exceptionally fine white form with few spots on the sepals, some pretty rosy forms, and four good blotched varieties. One very strong crispum spike bore eighteen buds. We also noticed examples of O. × Adrianæ, while the very rare O. ramosissimum album was pointed out, this not being in flower. A plant of O. c. Pittianum, which is being taken care of here, had three large bulbs and one growth, while a fine O. × Wilckeanum Pittiæ has recently produced three spikes, two of them with an aggregate of thirty-three flowers from the same bulb. Here we saw a nice batch of seedlings, including some from O. Pescatorei × crispum, both being fine spotted forms. A number of capsules told of hybridisation experiments, but more of this presently.

We now passed successively through four other large houses, on some of which, at least, we noticed that the shading was of tiffany, and there were closed stages for moisture-retaining purposes below the open ones. Here the same excellent culture was apparent, and Mr. McBean turned out a plant that had been potted only seven weeks, and showed that the compost was already full of roots. In the second of these houses we saw a lot of seedlings, mostly in small cases on shelves close to the glass. The tiny pots were bedded out in cocoanut fibre, and the two half sheets of glass were arranged in a shallow span, with the sunny side whitened beneath, a chink of air being given by the insertion of a small lath. Mr. McBean

explained that he had found this necessary, as previously he could rarely get seedlings beyond the globule stage. He showed us some that were germinating on the pots beneath, which were about to be pricked off and placed in the cases, and others that had been removed from the cases too soon, and had to be returned because the tiny leaves were turning yellow and shrivelling. They were now recovering. We suggested that the houses were not quite shady and moist enough for seedlings in their early stage.

Mr. McBean had encountered what for many years was the great obstacle to Odontoglossum raising, as it was frequently remarked that tiny green globules were produced, but they could not be carried further. This was at first a mystery, and then the need for some special fungus was suggested, but we think that the real cause is now apparent. Tiny seedlings have been known to vanish suddenly when the grower was away, through a little drought or too much sun, and this, at all events, was not due to the absence of a fungus. We long ago suggested that such tiny mites were very delicate in their infantile stages, and we believe that those who have succeeded best have adopted a rather moister and shadier treatment than is usually given to established plants. Babies will always require a little extra care or special treatment, and unless a house can be set aside for the treatment necessary for seedling Odontoglossums it is as well to provide a rather moister and shadier compartment for them on the lines above described.

But to return. Some of the seedlings mentioned had four leaves and looked quite promising. Underneath were germinating seedlings on the parent plants, the latter stood on the central pedestal of saucers of water to ward off the attacks of marauders. They are destined for the special treatment mentioned, as otherwise Mr. McBean estimated that not one in a thousand would survive. The work of hybridising is now being taken up in earnest, and in connection with a nice batch of the brilliant Cochlioda Nœtzliana in the next house it was remarked that the intention was to cross it with all the best Odontoglossums. In fact they have a few crosses already. Here we noted good examples of O. Harryanum, Pescatorei, × Adrianæ, × mulus and × Wilckeanum, some nice flowering plants of Epidendrum vitellinum, Miltonia vexillaria, Oncidium macranthum, the curious O. saltabundum, O. crispum, O. Forbesii, and Cymbidium Lowianum, the latter having been in bloom for three months. There was also a very remarkable Odontoglossum crispum xanthotes, having a large deep yellow blotch on each sepal and another on the lip, the petals being white. It was a tiny plant, purchased in flower, and should develop into a splendid thing. Here, too, was pointed out a batch of Vanda cœrulea in the most robust health.

A small house of Lælia anceps is said to contain all the finest white

varieties. The plants were growing well, and the house will be a picture next January.

Lastly we entered a large house largely devoted to Cattleyas and others requiring similar treatment, and here we found a lot of good things in flower. Some examples of the beautiful Dendrobium Dearei are said to be the remains of a good batch now nearly over. Several plants of Miltonia Roezlii alba were also very charming. Epiphronitis Veitchii is grown here in quantity with great success, and has made a brilliant show, though now nearly over. Cattleya was represented by nice examples of C. Gaskelliana, Harrisoniana, and Mendelii, while C. M. alba and C. × Mastersoniæ were pointed out in sheath. C. Dowiana aurea was represented by a good batch of plants in excellent condition for flowering later on. Other interesting things flowering were Brassavola Digbyana, a beautiful Lælio-cattleya Martinetii, L.-c. callistoglossa (in bud), Epidendrum radicans, E. advena (Godseffianum), Oncidium varicosum and Aërides odoratum. Numerous choice things not in flower were pointed out, but these we must pass over.

Everything was in thriving condition, and the luxuriance of the Odontoglossums, which form the leading feature of the establishment, was remarkable. We shall watch their experiments with the seedlings with interest. The locality is evidently very suitable for Orchid culture, and Messrs. McBean know how to make the most of it. The work is carried out on thoroughly practical lines, and attention to detail and experience account for much of the success achieved. We shall hope to renew our acquaintance on a future occasion.

ORCHIS INCARNATA.

A SPECIMEN of the true flesh-coloured Orchis incarnata, L., has been sent to Kew by Mr. F. J. Legh-Halahan, of Bedford, which was gathered at Wicken Fen, Cambridgeshire, and fully confirms the station recorded by Babington in 1860 (*Fl. Cambridg.* p. 225). It is a matter of some importance, because when the late Mr. C. B. Clarke pointed out the confusion into which the species had fallen, and published a figure (*Journ. Linn. Soc.* xix. p. 206, t. 31), he remarked that the Hampshire and Cornish stations were the only British ones known for the true plant. But it is now clear that Babington knew the plant, and he himself remarks :—"First noticed by me in the year 1833, but not then distinguished from O. latifolia." And Babington recorded the plant from four of the eight districts into which he divided the county. In the second edition of *Topographical Botany*, Orchis incarnata is recorded as occurring in thirty-seven of the 112 Vice-counties into which Great Britain is divided, and it is significant that in a supplement, published two years ago, thirty-eight additional Vice-counties are recorded, these latter records being of a later date than Mr. Clarke's

paper. Whether all are correct is doubtful, but I have seen living specimens from stations as far distant as Lancashire, Northumberland, Hampshire, and Cambridgeshire, and no doubt there are many other stations. It is quite distinct from O. latifolia, with which it has been confused. I have a plant from the Bransbury Marsh station, in Hampshire, now in flower.

R. A. R.

EPIDENDRUM TRACHYCHILUM.

THIS is a striking species of the Encyclium section of the genus which is still very imperfectly known, though it appeared in two groups at the recent Holland House Show. It was discovered by Hartweg on the Cumbre de Choacas, Mexico, and was included in Bentham's *Plantæ Hartwegianæ* (p. 92), under the erroneous name of E. alatum, Batem., a fact pointed out by Lindley when describing it for the first time in 1853 (*Fol. Orch.*, Epidendr. p. 19). Hartweg appears to have sent home living plants, for Lindley mentions cultivated specimens, and also made a very accurate painting of the lip on his herbarium sheet. The flowers are about as large as in E. virens, but the sepals and petals are more or less suffused with olive-brown, and the greenish-yellow lip has a very undulate front lobe, studded all over with minute purple papillæ, to which character it owes its specific name. The crest and side lobes are veined with purple. E. alatum is readily distinguished by its longer, narrower sepals and petals, a yellow border round the lip, and the absence of papillæ. Like the species already mentioned, and E. ionosomum, Lindl. (another near ally), the flowers are very fragrant. The only published figure that I know of appeared in 1885 (*Gartenflora*, xxxiv. p. 291, t. 1205), but the flowers there represented are small and weak. It appears to have been re-introduced of late years, and Mr. Bull obtained a plant in 1893.

R. A. R.

LACÆNA BICOLOR.

THIS striking Orchid, which was described by Lindley upwards of sixty years ago, has again appeared in cultivation, but, unfortunately, under a wrong name, it being exhibited as Acineta Hrubyana at a recent R.H.S. meeting (*Gard. Chron.* 1907, i. p. 427). It has been very unfortunate in this respect, having received a new name on four different occasions of its re-appearance, these being, successively, Peristeria longiscapa, Acineta Wrightii, Lueddemannia Sanderiana, and Acineta Hrubyana. It is a Central American plant, which was originally discovered by Hartweg, and flowered in the collection of the Horticultural Society. Its history has already been given in these pages (*O.R.* vi. p. 199). It closely approaches Lueddemannia in habit. The history of the true Acineta Hrubyana, Rchb. f., was also given shortly afterwards (*O.R.* vii. p. 169). R. A. R.

BULBOPHYLLUM ERICSSONI.

A PLANT of the remarkable Bulbophyllum Ericssoni, bearing two fine inflorescences, of eight and nine flowers, was exhibited at the last Temple Show by Messrs. Sander & Sons, St. Albans, as recorded at page 170. One of these is represented in the annexed illustration, which is reproduced

Fig. 27. BULBOPHYLLUM ERICSSONI.

about five-eighths natural size, from a photograph taken by Mr. F. W. Rolfe. There is little need to emphasize its remarkable character, for not everyone would recognise the figure as that of an Orchid at all—indeed it looks almost as much like some weird Octopus. The flowers are borne in an umbel, and radiate horizontally from the central axis. The common peduncle is not shown, being on the other side of the inflorescence and

nearly horizontal. The species was discovered by Ericsson, when collecting for Messrs. Sander & Sons, St. Albans, and was described by Dr. Kränzlin, in 1893 (*Gard. Chron.* 1893, ii. p. 522), the exact habitat not being recorded. Early in 1897 it flowered for the first time in cultivation, in the collection of the Hon. Walter Rothschild, at Tring Park, when it was figured (*Gard. Chron.* 1897, i. p. 61, fig. 16), and it was said to be probably a native of New Guinea. On March 9th of that year it received a First-class Certificate from the R.H.S., and on November 18th, 1902, it was again exhibited from the same collection, and received a Botanical Certificate. It has recently been figured in the *Botanical Magazine* (t. 8088), from a plant which flowered in the collection of Sir Trevor Lawrence, in October, 1899, an observation of Mr. White being recorded that "the flowers close partially at night, and open again in the morning." The individual flowers were originally compared with those of a Chimeroid Masdevallia, and recently they were described as "arranged in a circle, with the dorsal sepals piled up in the centre like a Chinese pagoda." This appears to be the normal character, for a year earlier a plant was described as "bearing an umbel of eight blooms, radiating like the spokes of a wheel, with the eight dorsal sepals piled up in a pyramid in the centre" (*O.R.* xiv. p. 270). This character is not shown in the figures mentioned, which probably arose from displacement of the flowers when packed in a box to send to the artist. The ground colour of the sepals and petals is light green, and the markings dark brown, these taking the form of spots and transverse markings on the sepals, and of longitudinal stripes on the petals. The lip is broad, fleshy and recurved in front, and suffused and mottled with reddish purple on a whitish ground. The sepals are very acuminate, and it will be noticed that the lateral ones are curled in a spiral at the apex. The petals are only half as long as the sepals, but equally accuminate. The inflorescence as shown measured eight inches in diameter. The species is nearly allied to B. virescens, whose history was recently given (*O.R.* xii. p. 272), and is quite similar in habit, but differs in the spotted flowers.

R.A.R.

CALENDAR OF OPERATIONS FOR AUGUST.

By W. P. BOUND, Gatton Park, Reigate.

WATERING is always a very important detail in the management of Orchids, and, with the regular maintenance of a sweet and buoyant atmosphere, is one of the principal factors towards success. It does not matter how well a plant may have been potted, or how good the material used may have been; if watering and ventilating are not done with great discretion, the highest ideal will not be attained. In commencing to write these remarks I had intended only speaking about watering, but the two

items go so much hand in hand, that it is very difficult to touch upon one, without at least hinting at the other. Whatever the degree of temperature required there must be a proper amount of humidity in the atmosphere, and this is secured by a judicious control of the heating and ventilation, with the necessary damping down of the floors, stages, &c.

It would be very misleading to say that this or that section will now require copious supplies of water; vigorous and well rooted plants may, but those that are weakly and have little root will be best suited if given water only as the compost becomes well dry.

A great deal depends on the class of material used. If the peat was really good, and by that I mean practically all fibre, a plant will take water much more often than it would if the peat contained but little fibre. I strongly advocate giving plants that are growing vigorously plenty of water, providing the material is sufficiently porous to allow it to run freely through, but if inclined to be sodden one must avoid this in all cases, whether the plants are potted in peat or loam composts.

CYPRIPEDES.—Most of the Cypripediums that were potted early in the year will now be well rooted, and it is during this month that growth is most active, so that every attention is necessary to see that they are not hindered through want of water. Any weakly varieties, or divided pieces that have not made much progress, should be removed to either the warmest corner, or into a house where they can have special attention. I never believe in allowing a sickly plant to die in the same place in which it was taken ill, and oftentimes a shift into another position—"it may be in the same house"—will start it growing away again. At any rate when one sees that something is not right, a shift, before the malady has taken too firm a grip, is often a good step towards remedying the mischief.

CYMBIDIUMS that were potted early will likewise require water in abundance, if they have well recovered from being disturbed, and are making vigorous growth. Those that have not been potted this year, and have their pots full of roots, should on no account be allowed to become dry, for the quantity of large roots they make will be ample to keep the material from becoming sodden.

CATTLEYAS that are growing freely or developing their new pseudobulbs should have water freely, providing the material used was of a very fibrous nature. As the growths finish up on those varieties that take their rest between the time of making bulbs and flowering, gradually reduce the water supply, taking care that they have enough afforded to thoroughly develop the new pseudobulbs. Many consider that the new pseudobulbs are ripened with the aid of direct sunshine. To a certain extent I agree, but if the new bulb has been properly built up it will not want anything like so much sunning to give it the required solidity. I therefore advise

doing as much as possible during the growing period to harden the growths as they develop, rather than trust to sunshine in the early autumn to solidify the soft and not properly-developed bulbs.

LÆLIAS.—L. anceps will now take water freely, and will derive considerable benefit if heavily syringed when the house is shut up about 3.30 p.m. Leave the house shut up till about six, and then, when the weather is favourable, put on a good deal of air, and let it remain on all night. L. pumila should also now be kept well supplied with water.

DENDROBIUMS.—Some of the Denbrobiums will by now have their growths nearly made up, though not developed. It is a great mistake to imagine that when the terminal leaf is apparent the resting season should commence. They have still much to do, and if they are given a decided check, either by removing them to cooler quarters or by withholding water too much, they cannot properly make up and solidify the new pseudobulb. By judicious watering they may to a great extent be prevented from starting into growth again, and I am sure that since we have kept them in one house all the year, we have not had a larger percentage grow away again than we did when we used to take them into one of the early fruit houses to give them their so-called rest.

The principle we follow at this season is to water very freely those that do not show the terminal leaf, but those that do we give enough to keep them developing. Combined with this we begin, about the second week in this month, to leave a little side air on all night, and when that has been done for a few weeks the new bulbs begin to show that healthy, ripened golden skin, and all the time this change is taking place the bulbs are still swelling. If water is withheld to a considerable extent, and much sunshine admitted, the bulbs harden, no doubt, but they do not swell to the same extent. They receive a check before full development, and it does not matter what class of plant we are dealing with, if such a check is given the ultimate result will not be the best.

As the season advances and the bulbs have become properly matured the supply of water can be to advantage greatly reduced, and it will be found that the new bulb, properly built up, will go a long time during the winter months without water, when they will be having their proper rest. I am afraid I have dwelt on this rather much, but I have been asked this question so often that I thought it would be of interest to other growers of Dendrobiums.

CALANTHES, from now till signs of decay are apparent on the foliage, should never be allowed to become dry. If they have been kept as dry as I suggested in the Calendar for March they will have made much root, and now they will respond very freely when water is given in quantity, and build up bulbs of good size and substance. It is also important that they

should not be staged too thickly, for the more light and air that can reach the maturing bulb the better.

SHADING.—The time for allowing the blinds down on the houses should now be gradually reduced, and making the change by easy degrees will benefit the inmates most. Where stippling has been used in conjunction with the blinds, it will be possible to admit a good deal of beneficial subdued light during this month and next, both morning and afternoon, only using the blinds during the middle part of the day. This, in addition to promoting good temperature, will considerably aid the proper development of the new growths.

ODONTOGLOSSUMS.—Towards the end of this month I like to begin to admit a fair amount of light on to the Odontoglossums, as the young growths make much sturdier foliage when they are not too heavily shaded, from about the end of August. I do not advise admitting enough sunshine to cause the loss of a good deal of back foliage, but only enough to prevent the plants from producing such weak growths that when they are moved the leaves fall over the pots and soon become crippled.

SOBRALIAS.—Any plants that require potting on, or dividing, should be attended to just when they are starting to throw up new reeds, after the flowering season is over. Speaking generally they are well suited when done this month. Being strong feeders, the compost should be of a retentive nature, such as one made up of three parts of good fibrous loam to one part each of peat and leaf soil, mixed together, with a liberal sprinkling of small crocks and coarse sand. A good drainage should be afforded, filling the pots at least one-third of their depth, over which place some very rough material. Pot firmly, keeping the compost rather below the rim of the pot. Large specimens that have exhausted the compost, if they cannot be potted on, should be carefully pulled to pieces, taking every care to preserve intact as many as possible of the youngest roots. It is well to remember that the outer parts of a specimen are the best pieces to use if it is desirable to rebuild a specimen.

When the plants are being overhauled cut out all the growths that have produced flowers and neatly restake them. A position in the Cool intermediate house will be found very suitable. They require liberal overhead syringing during the greater portion of the year, and constant observation is essential to see that the foliage does not become disfigured with thrip.

Those that have been divided must be kept well-shaded for some time and freely syringed, but do not apply much water directly to the compost before the young roots have well taken hold. Other plants that have not been disturbed, and are well rooted, will be aided by being kept well supplied with water, reducing the amount when the days are short and the light bad. Although the individual flowers only last a few days, a batch of well-grown

Sobralias have a fine appearance in the houses, and the short life of the individual flower is well counterbalanced by the head producing flowers for a considerable period. One of the greatest mistakes made in the cultivation of these plants is that of growing them in a too hot and stuffy atmosphere.

SOPHRONITIS GRANDIFLORA.—New growths are now coming away freely on this charming pygmy species, and any potting or surfacing necessary may now be done. I do not like disturbing these more than is absolutely necessary, but from time to time it is essential to give them a thorough overhauling. When a specimen begins to show signs of deteriorating in the centre it is quite right to take it to pieces carefully, cutting away all dead parts and rebuilding it, using a compost made up of equal parts of good fibrous peat and sphagnum, with some sand and small crocks. Ordinary pots with holes for suspending are very good receptacles, or pans that have not side perforations may be used. Give a very liberal drainage, as being more or less surface-rooting plants they do not require a great depth of soil. Pot firmly, and they will go for several seasons with only having the surface material renovated from time to time. Place these where they can enjoy a fair amount of light in the Cool intermediate house. I have had much better results since we grew them in this house than we had when they were grown in the Cool or Odontoglossum house. Newly-potted plants will require very careful watering for some time, but those that are growing away freely and have not been disturbed will be benefited by being given a liberal supply from now till the short and dull days are with us, when water should be given only as they become well dry.

COCHLIODA NŒTZLIANA.—The flowering season being now over, new growths are coming away freely, especially on those that have not produced flowers this season. When they are about one inch high is the best time to carry out any potting or surfacing, using the same compost as given above for Sophronitis. They are best suited when grown suspended in the Odontoglossum house. During active growth they require a fair amount of water, but do not at any season water them quite so freely as as one would an Odontoglossum. This beautiful species is going to prove itself, or perhaps I should say has proved itself, the best parent we have to give us new colour in the Odontoglossums. It is difficult to imagine what the influence of this species may not have done in say ten years from now, as by then we shall have no doubt seedlings of the third and perhaps fourth generations, creating no doubt many disappointments, which will make the good ones all the more precious. I believe this species is going to be the one that will be to the Odontoglossums what Lælia cinnabarina has been to Cattleyas and the allied genera, and apart from hybridising it should be found a place in every collection of Cool Orchids.

ORCHIDS AT CAMBRIDGE LODGE, CAMBERWELL.

THIS is one of the oldest collections of Orchids in the country, and many of the plants in it have historical interest, having found a home here for twenty years and more. This is one of the few private collections which changing fancies have but little influenced. The genera Masdevallia, Pleurothallis, Restrepia, &c., which for the most part are inconspicuous when in flower, are as much cherished as those which are in the front rank of fashion. The rapid movement in Lælio-cattleyas, the almost fanatical craze after blotched Odontoglossums, and the dizzy prices that have been paid for them—even poor, inconsequential individuals like myself have got accustomed to talking glibly of the worth of a plant as being a hundred guineas or a thousand guineas!—have not upset the equanimity of this collection; not that Lælio-cattleyas and Cattleya hybrids have been neglected, for very many crosses are here represented, a large number of which have been home raised; only the old love has not been forsaken for the new.

Among the showy Orchids at Cambridge Lodge the Cypripediums are probably the most important. A large number of well-known Cypripediums have been raised and flowered here. Many plants in the Warm house are being grown into good specimens, and there are a nice lot of unflowered seedlings of interesting crosses merging on flowering size, among them being a number of secondary Fairrieanum hybrids. The named hybrids which have bellatulum or niveum for one of their parents are an important element in this house, there being also many of the named Fairrieanum crosses. The Cypripediums include many choice things, but I shall not attempt to catalogue them, and they are all doing exceedingly well, justifying their reputation as being excellent plants for town growing. Small Lælio-cattleyas, Dendrobium cuttings and seedlings, &c., were occupying the roof of this house.

In the Cool house adjoining were more good Cypripediums, and I noted among the insignes a plant of Harefield Hall variety having eight new growths. A batch of Miltonia vexillaria were in flower and bud, and there were also several plants of the rare M. Schrœderiana. We now pass through a house containing the insectivorous plants, Cephalotes, Sarracenias, and Droseras, interesting plants which have been cultivated here for a large number of years. The next house contained more cool-growing Cypripediums, while hanging up were a number of Masdevallias of the Chimæra section, a few of which were showing their rather weird flowers. Anguloas, Lycastes, Selenipediums, &c., were also growing here. Cœlogyne barbata was throwing up a spike.

The Cattleya house contains all the generally grown species, a good Schilleriana and a few other things being in flower on the day of my visit.

Some of the larger hybrids were suspended, and a few were showing sheaths for the first time. Albinos of C. Mossiæ, Eldorado, intermedia, &c., are represented. A nice plant of C. labiata var. R. I. Measures I also noted. Lælia Dayana delicata is a choice variety having pure white sepals and petals and a slaty blue lip.

We now come to several small houses containing a large variety of interesting things—Odontoglossum citrosmum, thriving batches of Cypripedium niveum, and C. Godfroye leucochilum, &c., while the Lælia purpuratas have a division to themselves. These have flowered very well this year. In the Phalænopsis house was a strong plant of Cœlogyne pandurata throwing up a spike, while the Phalænopsis themselves make a very interesting collection. The Dendrobiums are also accommodated with a small house to themselves, and they are making good growths, while another division is devoted to specimen Cymbidiums.

In the Vanda house things are looking very well. There is included here a good selection of Aërides, Angræcums, &c. Vanda Parishii was in spike, while Saccolabium curvifolium was in flower. On the roof were two good specimens of Schomburgkia tibicinis, Cœlogyne Massangeana, &c.

In the Odontoglossum house were two very fine plants of Oncidium macranthum in flower. Several plants of Oncidium zebrinum grow quite freely here but do not flower. Good plants of Maxillaria grandiflora and M. Sanderiana were also noted.

The Masdevallia house, which contains a fine collection of these plants, besides many botanical curios belonging to other genera, was quite bright with forms of M. Harryana and M. ignea. Many other curious things were also dotted about in flower.

The Cambridge Lodge collection is a most varied and many-sided one, and requires much care and patience in handling, and Mr. Smith, who has been in charge for the last five years, is eminently suited for the work, being entirely free from the narrow prejudices in which some of us are ensnared. He is entirely devoted to his work, and while working under great difficulties because of the winter fogs, and from having some of his houses overshaded, he plods along with the best of grace, and is making cumulative progress.

Mr. Smith gave me a good hint on the way to kill cockroaches, which is worth a trial where they are troublesome. Fumigating one night as late as ten o'clock he found next morning a large number of dead cockroaches on the floor, and since then he has repeated the experiment with entire success. As it is at night that cockroaches come out of their cover, and as thrips do not hide up at night, one can thus kill two birds with one stone. It is just even possible that thrips will be easier caught late at night as well—literally caught napping.

J. M. BLACK.

ODONTOGLOSSUM × ARMAINVILLIERENSE VAR. ROBSONÆ.

AT the last Temple Show a very handsome Odontoglossum was exhibited by Mr. John Robson, Altrincham, under the name of O. × ardentissimum var. Robsonæ, to which a First-class Certificate was awarded, as recorded at page 179. It afterwards passed into the collection of A. Warburton, Esq., Vine House, Haslingden, and received a similar award from the Manchester Orchid Society on June 13th. A flower and photograph were kindly sent by Mr. Warburton, and the latter we now reproduce natural size, though, in conformity with the note published at page 155, we feel

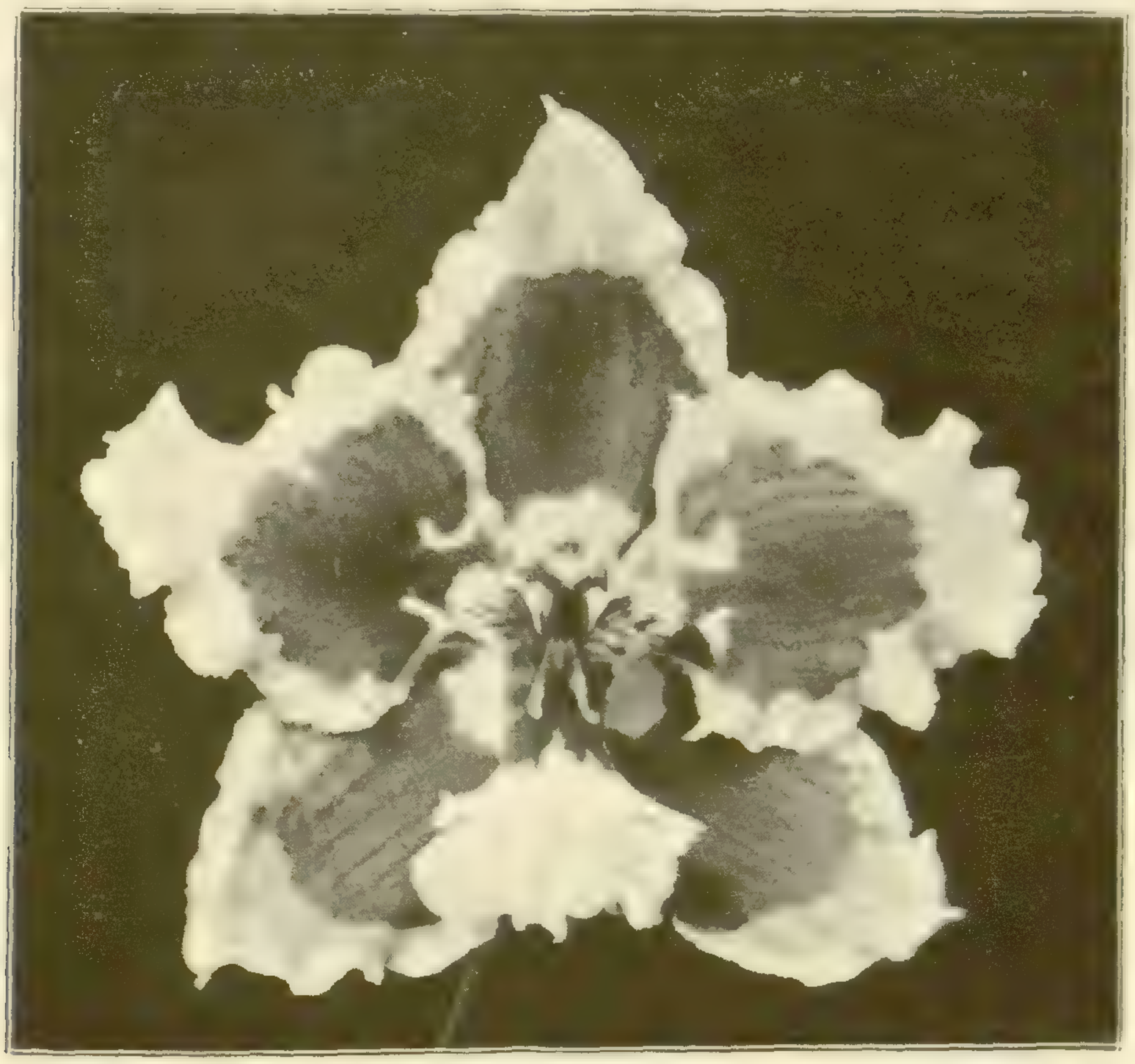

Fig. 28.—ODONTOGLOSSUM × ARMAINVILLIERENSE VAR. ROBSONÆ.

bound to adopt the name of O. × armainvillierense for the hybrids between O. crispum and nobile (Pescatorei), it being over three years earlier than O. × ardentissimum, which further appeared simultaneously with O. × concinnum, O. × dulce, and O. × venificum, all four being forms of the same hybrid, and indeed out of the same seed pod. We do not know the early history of the superb variety now figured, but we consider it one of the most attractive which has yet appeared, the shape being excellent, and the broad white margin to the segments setting off the large purple blotches to great advantage. Mr. Warburton very well describes the colour as "a lovely shade of plum purple." The character of the flower is so well shown in the figure that we need only add that in the shape of the segments, the

side lobes of the crest, and the nearly entire column wings it has retained much of the O. nobile character.

With regard to the question of the specific name Mr. Crawshay writes that he overlooked the description of O. × armainvilliense in *O.R.* 1902, p. 210 when writing the note alluded to at page 155.

SOCIETIES.

ROYAL HORTICULTURAL: HOLLAND HOUSE SHOW.

THE Summer Show was held in the Grounds of Holland House, Kensington, on July 9th and 10th, when there was a very fine display of Orchids, and the function was very successful, there being ample space both for the display of the exhibits and the convenience of visitors. The Awards consisted of three Gold and two other Medals, three Silver Cups, one First-class Certificate, and two Awards of Merit.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), staged a large and brilliant group, to which a Gold Medal was awarded. In the centre were brilliant examples of Lælio-cattleya Canhamiana alba, with a number of good L.-c. Phœbe and Martinetii, while the background was made up of well-bloomed Oncidium macranthum, O. Papilio, O. varicosum, O. zebrinum, Cymbidium Lowianum, C. × eburneo-Lowianum concolor, Epidendrum × Boundii, and other tall plants. Two mounds of British Orchids near the front were interesting, these containing many examples of Ophrys apifera, Orchis maculata, O. pyramidalis, Aceras anthropophora, Gymnadenia conopsea, and Listera ovata. Other interesting and handsome things were some good Masdevallia coccinea, M. Veitchiana, M. muscosa, Vanda Parishii, Spathoglottis aurea and × Colmaniana, Phalænopsis Esmeralda, the brilliant Cochlioda Nœtzliana, some good Cypripedium niveum, C. callosum Sanderæ, C. Lawrenceanum Hyeanum, Odontoglossum × amabile, Pleurothallis macroblepharis, Ancistrochilus Thomsonianus, Dendrobium Maccarthiæ, Epidendrum alatum and prismatocarpum, Lælia tenebrosa and purpurata, Platyclinis filiformis, Bulbophyllum Lobbii, &c. An Award of Merit was given to Brassocattleya Mary (Brassavola nodosa × Cattleya Lawrenceana), a very pretty hybrid most like the seed parent in shape, but the flower larger, and cream white, blotched and spotted with bright rose-purple.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), staged an interesting group of about fifty Orchids (with a number of Sarracenias and other insectivorous plants), receiving a Silver Cup. It contained the striking Cœlogyne pandurata, Cattleya Mendelii, Gaskelliana, Mossiæ Reineckeana, Lælia tenebrosa and purpurata, Miltonia vexillaria, Odontoglossum Pescatorei and crispum, Physosiphon Lodd.igesii, Stelis Miersiana, Masdevallia coccinea and × Ajax, Pleurothallis macroblepharis, Brassa-

vola Digbyana, Phalænopsis speciosa and amabilis, Promenæa xanthina, a good Oncidium macranthum, Lælio-cattleya Martinetii, Cypripedium Lawrenceanum, and others.

Mrs. Ernest Hills, Redleaf, Penshurst (gr. Mr. Ringham) received a Silver Banksian Medal for a well-flowered group of Miltonia vexillaria.

M. F. Lambeau, Brussels (gr. M. de Munter), received a First-class Certificate for Lælio-cattleya Clive, Lambeau's var., a remarkably large form, with very broad and richly-coloured segments.

W. P. Burkinshaw, Esq., Hessle, Hull (gr. Mr. Barker), sent the fine Cattleya Mossiæ Reineckeana superba.

Walter Cobb, Esq., Normanhurst, Rusper (gr. Mr. Salter), sent Odontoglossum × Cobbianum, a very large, heavily-blotched form of uncertain parentage, but allied to O. × Othello.

G. W. Jessop, Esq., Cliff Cottage, Rawdon, Leeds (gr. Mr. Wilkinson), sent a very fine specimen of Aërides multiflorum var. Lobbii, bearing three spikes, the best being branched and about two feet long.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Cattleya Warscewiczii Mrs. Francis Wellesley, a very fine light-coloured form.

Messrs. Sander & Sons, St. Albans, staged a remarkably fine group, to which a Gold Medal was awarded. It contained a very fine series of Lælio-cattleya Martinetii and Canhamiana, also some excellent Miltonia vexillaria, M. × Bleuana, and Cattleyas, noteworthy among the latter being C. Mossiæ Wageneri, C. M. Reineckeana excelsa, C. × Whitei Ronsele variety (raised by the Marquis de Wavrin), C. Mendelii, C. × mollis, C. × Prince Edward, and C. × Roehrsiana. Odontoglossums included O. × excellens, O. × elegans Eastwood Park var., O. luteopurpureum, O. Pescatorei, O. Hallii, and a remarkably fine hybrid called O. × Emperor of India, having the white ground colour largely obliterated by deep claret-purple blotches. Other interesting things were Epidendrum trachychilum, prismatocarpum, glaucum, and rigidum, a very fine clump of Barkeria spectabilis, Aërides odoratum, Maxillaria Sanderiana, Cœlogyne pandurata and Schilleriana, Ansellia nilotica, Promenæa stapelioides, Eulophia Lubbersiana, Cycnoches chlorochilon, Sarcanthus pallidus, Odontonia Lairesseæ in splendid condition, the inflorescence bearing seven side branches and about sixty flowers, Calanthe veratrifolia, Phalænopsis amabilis, the rare little Pleurothallis tribuloides, with sessile, brick-red flowers, Phragmopedilum caudatum, Cypripedium × Ultor, C. × Lady Maple, C. × Lord Derby, Galeandra lacustris, Renanthera Imschootiana, Oncidium incurvum, O. leucochilum, and other interesting things.

Messrs. James Veitch & Sons, Chelsea, staged a large group of ornamental plants, to which a Gold Medal was awarded, and in the centre

were a number of fine Orchids. These consisted of some good examples of Sobralia × Veitchii, Cattleya Gaskelliana, Mossiæ and Mendelii, Lælia purpurata, Lælio-cattleya Canhamiana, a number of good Odontoglossum crispum, Oncidium macranthum, Marshallianum, leucochilum, and sarcodes, Cypripedium callosum Sanderæ, and Platyclinis filiformis.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very fine group, to which a Silver Cup was awarded. It contained a fine series of the Cattleya group, specially noteworthy being the chaste C. Warneri alba, C. Mossiæ Wageneri, C. M. Arnoldiana, C. M. Reineckeana King Edward VII., a very fine form, C. Mendelii mosaica, having the segments variegated with pink and white, C. × Fernand Denis, numerous showy Lælio-cattleyas, L.-c. Canhamiana Rosslyn var. being exceptionally large and rich, L.-c. Phœbe, Epidendrum nemorale, virens, and trachychilum, an Epilælia derived from Lælia tenebrosa and Epidendrum advena, having the shape of the latter and almost the colour of the former, &c. Odontoglossums included some good forms of O. × Phœbe, O. crispum, O. × Ossultoni, O. × crispo-Harryanum, a pretty hybrid between O. hastilabium and O. Hallii, &c. At the back of the group were some good Phalænopsis amabilis Rimestadiana, Oncidium macranthum, and other tall things.

We noted also the rare Eriopsis rutidobulbon, Peristeria elata, Acanthophippium javanicum, the striking Platanthera Susannæ, Cœlogyne pandurata, the brilliant Renanthera Imschootiana, some fine Miltonia vexillaria, M. × Hyeana, Lycaste Deppei, L. aromatica, crowded with flowers, Aërides Lobbii, Cochlioda Nœtzliana, Polystachya bracteosa, Oncidium Harrisonianum, and other interesting things.

Messrs. Hugh Low & Co., Enfield, also received a Silver Cup for a fine group of Orchids, &c. There were numerous good forms of Cattleya Mossiæ and C. Mendelii, a fine example of the latter bearing thirty flowers, a good C. Mossiæ Wageneri, C. Grossii, Anguloa Clowesii, Dendrobium Bensonæ, some good Platyclinis filiformis, Epidendrum prismatocarpum, graniticum, vitellinum and × Endresio-Wallisii, Aërides odoratum and japonicum, Peristeria elata, Brassavola Digbyana, Odontoglossum Harryanum and × Wilckeanum, Lælia tenebrosa, Lælio-cattleya eximia, Renanthera Imschootiana, Calanthe veratrifolia, Bulbophyllum Dearei, claptonense and siamense, Cypripedium niveum, concolor, bellatulum, &c., with Oncidium leucochilum, carthaginense, Marshallianum, Wentworthianum, Odontoglossum hastilabium, and other tall things at the back.

Messrs. Stanley & Co., Southgate, received a Silver Banksian Medal for a good group of Orchids, including good examples of Cattleya Mossiæ and Mendelii, Lælio-cattleya Aphrodite, Oncidium varicosum and leucochilum, Cypripedium × Transvaal, Masdevallia maculata, Miltonia × Binoti, and M. × Cogniauxiæ.

M. A. A. Peeters, Saint Gillies, Brussels, showed Odontoglossum crispum La Dame Blanche, a beautiful white form, with some yellow blotches in front of the lip's crest, and Cymbidium Humblotii, a very rare Madagascar species, which gained an Award of Merit. The flowers are green with some black markings on the lip, and somewhat resemble Coelogyne pandurata.

Messrs. Cutbush & Sons, Highgate, showed about two dozen good examples of Cypripedium Reginæ in a very fine group of hardy plants.

Among Horticultural Sundriesmen, Messrs. Wm. Wood & Son, Wood Green, N., received a Silver-gilt Flora Medal for Orchid and other requisites, and Messrs. D. Dowel & Son, Hammersmith, a Silver Banksian Medal for Orchid pottery, &c.

At the meeting held at the Royal Horticultural Hall, Vincent Square, Westminster, on July 23rd, there was a particularly fine display of Orchids for the season, and the awards consisted of one Gold and five other Medals, and four Awards of Merit.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged a magnificent group, alike excellent for quality and culture, to which the Society's Gold Medal was awarded. Among the numerous fine specimens it contained may be mentioned a plant of Miltonia vexillaria with fifteen fine racemes, M. v. Queen Alexandra, a large and beautiful nearly white form with 33 flowers, the brilliant Sophrolælia læta Orpetiana with five blooms, a fine Odontoglossum Pescatorei with a tall branching panicle of 63 flowers, and a noble specimen of Cattleya Warscewiczii bearing 26 fine blooms. There were also good examples of the rich, bronzy C. × fulvescens, C. × Lord Rothschild, C. × Patrocinii, C. × Hardyana, C. × Ashtoni, C. Grossii, C. granulosa, Lælio-cattleya elegans, L.-c. callistoglossa var. Earl Grey, a very richly-coloured form, L.-c. Caligula (C. Warscewiczii × L.-c. callistoglossa), L.-c. epicasta, L.-c. Clive, Westonbirt var., Miltonia vexillaria, Hardy's var., having a large dark blotch on the lip, Brassolælia Helen, forms of B.-l. Pluto, Oncidium sarcodes, O. prætextum, O. Gardneri, Phalænopsis amabilis, and other interesting things. Awards of Merit were given to Cattleya × Macænas var. Thor (superba × Warscewiczii), a very richly-coloured variety, with a very sharply defined yellow disc to the lip, and to C. × Waldemar (× Whitei × Dowiana aurea), a charming thing, having cream-coloured sepals and petals flushed with light rose, and a broad rosy lip, lined with deep yellow in the throat.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for a good group, containing the pretty Maxillaria ochroleuca, crowded with flowers, Cœlogyne Massangeana, C

speciosa, Cattleya Mossiæ Reineckeana, Lælio-cattleya Clive, Masdevallia demissa, and others, Cypripedium superbiens, C. Curtisii, Miltonia vexillaria, &c. An Award of Merit was given to the handsomely variegated Dossinia marmorata, of which a number of good examples were shown, these having been propagated by division.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent a pretty light form of Lælio-cattleya Henry Greenwood, and the richly-coloured Cattleya Warscewiczii saturata, in which the yellow eyes are completely obliterated.

M. F. Lambeau, Brussels, received an Award of Merit for Miltonia vexillaria, Lambeau's var., an exceptionally fine rose-coloured form, having the sepals and petals margined with white, and the lip four inches across, and whitish at the base, with some reddish lines on the disc.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent a spike of the rare and very striking Lueddemannia Pescatorei, nearly a yard long, and bearing numerous orange-coloured flowers, with a coppery suffusion on the sepals.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent the pretty little Oncidium pumilum, and Dendrobium ciliatum annamense, the latter having cream-white flowers with some purple markings on the lip.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent a good plant of the handsome Lælio-cattleya Clonia gigantea.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a rich and varied group, to which a Silver Flora Medal was given. It contained many beautiful hybrids and rare species, noteworthy among them being the striking Cycnoches Egertonianum viride, Trichopilia Turialvæ, the pretty little Oncidium Waluewa (Waluewa pulchella), O. Reichenbachii, the very rare O. stramineum, Stelis tristyla, Warscewiczella Wailesiana, Bulbophyllum Lobbii, Pleurothallis macroblepharis, Odontoglossum blandum, O. × Rolfeæ, O. Schlieperianum citrinum, and O. Pescatorei Golden Gem, with pretty yellow flowers, much resembling O. Pescatorei in shape, though we suspect that the colour is due to the influence of O. triumphans. Among the hybrids noted were Cattleya × Elvina, some handsome Lælio-cattleya callistoglossa and Canhamiana, the pretty L.-c. mollis, L.-c. Elba (L.-c. Ingramii × C. Warscewiczii), a neat little hybrid, most like the former in shape, and the lip very richly coloured, with a pair of yellow eye-like blotches in the throat, and other interesting things too numerous to particularise.

Messrs. T. Cripps & Co., Tunbridge Wells, received a Silver Flora Medal for a brilliant group of about fifty plants of Disa grandiflora, a few of the spikes bearing three flowers.

Messrs. Sander & Sons, St. Albans, received a Silver Banksian Medal for

a good group, containing two profusely-flowered plants of Gongora galeata (Acropera Loddigesi), Ancistrochilus Thomsonianus, Galeandra lacustris, Trichopilia marginata, Eria acervata, Epidendrum rigidum, Aërides expansum, Masdevallia muscosa and others, Miltonia vexillaria with ten immense flowers, a plant called Phaius maculatus albus, having unspotted leaves and ivory-white flowers, veined with dull purple on the lip, Cattleya Leopoldi and C. Warscewiczii, Cypripedium × Lord Derby, Brassolælia Mrs. Gratrix, and Odontoglossum × memoria Lambeauiæ, derived from O. Prince Albert (suspected to be a very dark O. sceptrum) crossed with O. Harryanum, and partaking of the heavy dark markings of both parents, with a yellow ground colour.

Messrs. James Veitch & Sons, Chelsea, also obtained a Silver Banksian Medal for a good group, containing the handsome Disa × Luna, Masdevallia × Imogen, Cochlioda Nœtzliana, Odontoglossum Pescatorei, Sobralia × Veitchii, Lælio-cattleya Vesta (L. × vitellina × C. superba), with bronzy yellow sepals and petals, and a purple lip, Oncidium leucochilum, Cypripedium × Wiertzianum, and the brilliant Brassocattleya Digbyano-Warscewiczii.

Messrs. Hugh Low & Co., Enfield, showed two good forms of Odontoglossum Pescatorei, a good Cattleya Gaskelliana alba with four flowers, and C. G. Phyllis, a pale rosy form.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on July 4th, when the Orchid exhibits were not numerous, the awards consisting of two Medals and one Award of Merit. The members of the Committee present were: E. Ashworth, Esq., Chairman, and Messrs. Cowan, Keeling, Leemann, Parker, Sander, Smith, Walmsley, Warburton, and Ward.

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), received a Silver Medal for a fine group of Cattleyas, Odontoglossums, some well-grown plants of Miltonia vexillaria, &c. A pretty variety of Lælia tenebrosa, having yellow sepals and petals, and called variety Victor, was also included.

Messrs. A. J. Keeling & Sons, Bradford, received a Bronze Medal for a good group, including, among other interesting things, a fine plant of Stanhopea bucephalus and various Masdevallias. An Award of Merit was given to a new hybrid Cypripedium.

E. D. Bostock, Esq., Stone, exhibited Cypripedium niveum var. Supreme, a fine form.

H. J. Bromilow, Esq., Rainhill, exhibited Cypripedium Godefroyæ "Ran Lea var."

CYMBIDIUM HUMBLOTII.

AFTER being lost sight of for a considerable period, this very distinct Madagascar species has reappeared in cultivation, in the establishment of M. A. A. Peeters, of Brussels, a flower having been sent for determination that was received some time ago with Phaius from that country. The plant was exhibited at the recent Holland House Show, and received an Award of Merit. The species was originally discovered by M. Humblot, and was described in 1892, when it flowered in the collection of C. N. L. Ingram, Esq., Elstead House, Godalming (Rolfe in *Gard. Chron.* 1892, ii. p. 8). It had been obtained as Cymbidium Loise-Chavieri (the supposed "scarlet" Cymbidium), and was exhibited at a meeting of the R.H.S. on June 7th, when it received a Botanical Certificate. The flowers are borne in an erect branching panicle, and are light green, with some blackish markings on the lip, recalling Cœlogne pandurata to some extent as regards colour. Though very distinct from C. rhodochilum in the colour of the lip it is a very near ally of that species, and it may be remarked that the Madagascar species of Cymbidium differ from their Asiatic confreres in having a paniculate inflorescence. They also seem more difficult to cultivate. C. rhodochilum is known to grow in clumps of Platycerium, and the prevent one has also the appearance of an epiphyte. One other species is known, namely, C. flabellatum, Lindl., which has not yet appeared in cultisation.

R.A.R.

ERIA LATIBRACTEATA.

IT is unfortunate that we have two species of Eria bearing the name E. latibracteata. The first is a native of Borneo, which was sent to Kew for determination by Messrs. Sander & Sons, in July, 1895, and after being named as above by the writer was exhibited at a meeting of the R.H.S., and received a Botanical Certificate, its characters then being briefly recorded (*Gard. Chron.* 1895, ii. p. 102; *Orch. Rev.* iii. p. 285). A year later it flowered at Glasnevin, and in July, 1897, also at Kew, when it was figured in the *Botanical Magazine* (t. 7605). In the meantine another species had been described as Eria latibracteata, by Mr. Ridley (*Journ. Linn. Soc.* xxxii. p. 294). It had been collected at Sungei Ujong, in the Malay Peninsula, by a Dr. Braddon, and is described as a rather pretty plant, the large apple-green bracts setting off the white and madder-coloured flowers. It is said to be an ally of E. acervata, Lindl., and E. recurvata. Hook. f., with the habit of E. floribunda, Lindl. As the latter requires a new name it may be suitably called E. Braddonii, after the collector. Both the species belong to the section Hymeneria, and the latter is probably not yet known in cultivation.

R. A. R.

LÆLIO-CATTLEYA × WAVRINII.

A FLOWER and photograph of a very interesting and beautiful plant have been sent by the Marquis de Wavrin, Chateau de Ronsele, Ghent, and the latter is reproduced in the annexed figure. It was purchased in flower

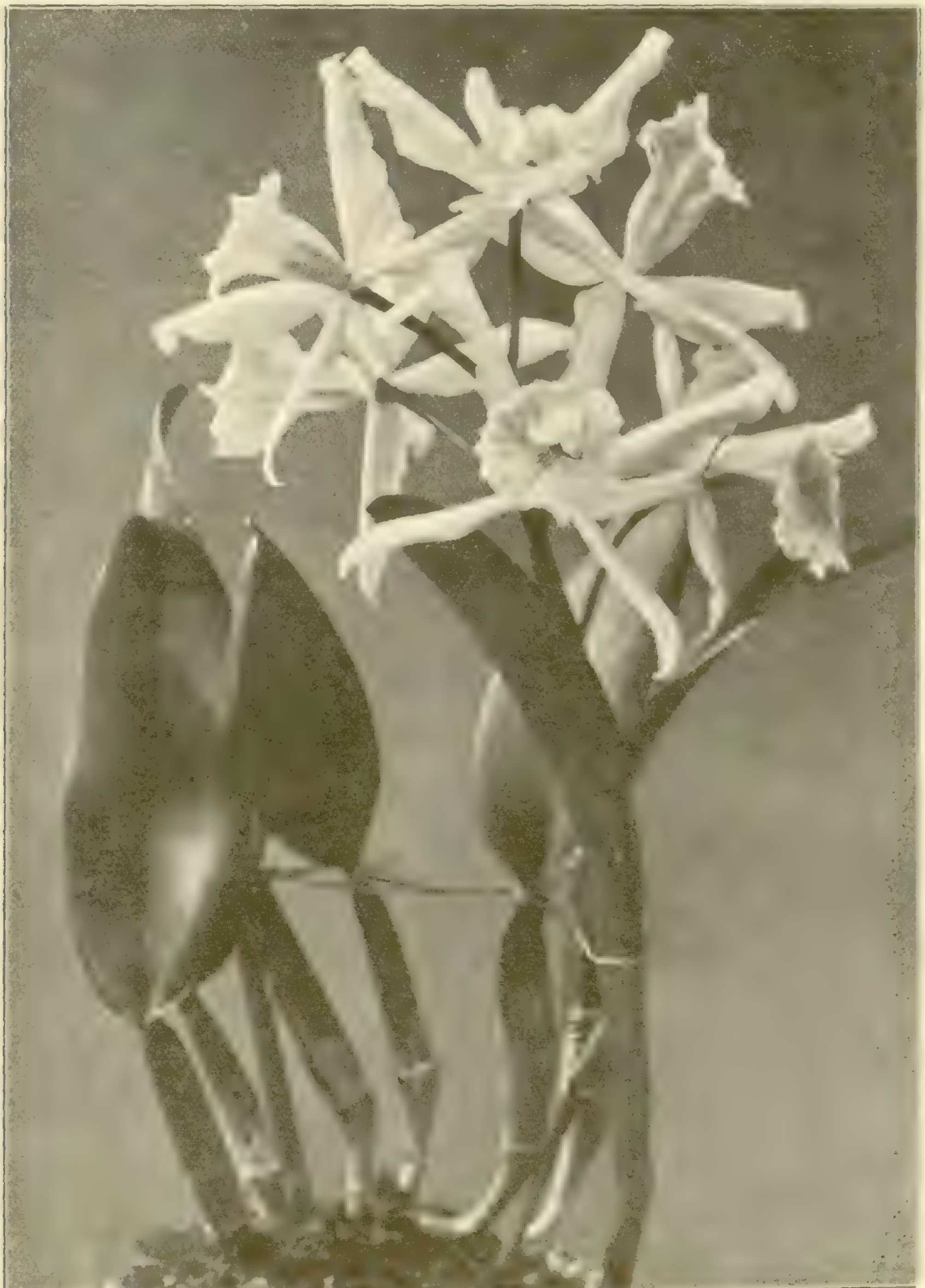

Fig. 29. LÆLIO-CATTLEYA WAVRINII.

from M. E. Praet, of Mont St. Amand, near Ghent, and is suggested to be a natural hybrid between Cattleya Walkeriana and Lælia Boothiana. It is, however, believed to have come out of an importation of Cattleya

labiata received about four years ago, which introduces a serious geographical difficulty. There are four large and four small pollen masses, showing that the plant is a Lælio-cattleya, and the Cattleya parent is believed to have been C. Walkeriana, because of the dwarf habit, the rather short broad leaves, and a small but characteristic yellow blotch on the disc of the lip. The Lælia parent is not so easy to determine, for we cannot find a record of L. Boothiana growing in the same district as C. Walkeriana. L. crispa and C. Walkeriana, however, are both recorded from the province of Minas Geraes. and as the lip of the novelty is both crisped and distinctly veined. and the sepals and petals lighter than in L. Boothiana, the question arises whether L. crispa was not rather the second parent. We do not see what species from the C. labiata district could give such a hybrid, and in any case we have clearly something more to learn about the distribution of Brazilian Cattleyas. We cannot find anything at all like it, and suggest calling it Lælio-cattleya Wavrinii, after its possessor. As regards the habit of the plant and shape of the flowers the figure may be left to speak for itself. The colour may be described as rosy lilac with darker veins on the lip. It is certainly very handsome, and we hope that the publication of a figure may help to clear up its origin.

R. A. ROLFE.

ORCHIDS AT GATTON PARK, REIGATE.

OUR previous visit to Gatton Park, Reigate, was made in the autumn of 1905, when the autumn-flowering Cypripedes were in bloom, and we then pointed out the rapid progress being made, particularly in the fascinating work of hybridising Orchids (*O.R.* xii. pp. 344-346). It was just before the recent Temple Show that we saw the collection again, and found a very fine display of bloom, while the seedling department was growing rapidly.

The first house entered is mostly devoted to seedling Cattleyas and Lælio-cattleyas, with a very fine series of Brassavola Digbyana crosses, in various stages, and here we saw several good Cypripedium callosum Sanderæ, one having three flowers; also the Oakwood-raised C. Lawrenceanum Hyeanum. A flower of C. × Olivia was pointed out that opened on November 4th, and was still good. It stood in a shady place over a tank of water. Bulbophyllum Lobbii Colossus also bore three good flowers.

In the next house the seedlings were of larger size, and here a number of Spathoglottis seedlings were pointed out, this group having received much attention of late. We noticed here two capsules on Brassovala Digbyana. A new fibre is being tried which promises to give very good results, and it would be very interesting to know its origin.

A third house contains mostly seedlings of nearly flowering size, indeed

two Cattleya × William Murray were already in bloom, and here we saw some Sophronitis crosses germinating freely. There was a nice batch of plants, though Mr. Bound, like others, finds that they grow very slowly. One seedling Cœlogyne was growing away from others of the same batch in a curious way, these being mostly slow growers.

In another house we saw some Epidendrum × Boundii which have been flowering continuously since the last Temple show, and Lælio-cattleya Nysa producing a four-flowered inflorescence on a pseudobulb from which no leaf has developed. Here also were some good Cirrhopetalum Cumingii, a richly coloured Cypripedium bellatulum, several very good C. concolor, the rare Vanda Denisoniana, and a richly coloured hybrid from Lælio-cattleya Schilleriana × Cattleya Lawrenceana.

In the Corridor we saw a lot of the deep yellow Spathoglottis aurea, and several of the handsome S. × Colmanii. One clear yellow form came out of the same pod as the latter. Here were growing well a batch of hybrid Dendrobiums. In the next division of the Corridor was a fine batch of Phaius × Norman in flower, now rather past its best, but still a picture, and here were three seedlings from Epidendrum radicans ♀ and Diacrium bicornutum ♂, one of which has flowered. Epidendrum × Boundii was making a good show, and has been so all the winter. A seedling from it crossed with E. xanthinum was in bloom, and differed chiefly in being more yellow in colour. Another seedling with Brassavola Digbyana as the pollen parent has the usual Epidendrum habit, but the glaucous leaves showed the Brassavola influence, and flowers are awaited with interest. E. × Boundii has also been crossed with another hybrid Epidendrum (said to be from E. × O'Brienianum × cochleatum), and some of the seedlings are said to have been much like the seed parent, and others like E. × O'Brienianum with a bright yellow disc. These hybrid Epidendrums are remarkably floriferous and very useful for cut flowers. We saw also the curious Epilælia radico-purpurata and a few Epiphronitis Veitchii.

In the Cattleya house were many good C. Mossiæ in bloom, both white and coloured, and one curious flower had a segment half petal and half lip, while the opposite petal was suppressed. Among Lælia purpurata a variety called Black Prince had an exceptional amount of purple on the segments. There were also some brilliant Lælio-cattleya Phœbe, Vanda teres, the handsome Sophrolælia Psyche, and various other fine things in flower and bud.

In another Warm house was a fine series of over thirty plants of Cattleya × William Murray in flower, showing much variation, the result of crossing and reversing C. Lawrenceana and C. Mendelii (both having been used as the seed parent). There were also some excellent Lælio-cattleya G. S. Ball, raised in the collection, the beautiful Miltonia × Bleuana, many

fine examples of M. vexillaria, several Epidendrum prismatocarpum, Lycaste cruenta, Brassavola nodosa, Odontoglossum citrosmum, and Vanda Parishii in bud. Two plants of Cattleya Skinneri alba were pointed out, also the dwarf Epidendrum polybulbon crossed with E. × Boundii, which may give some curious result. A fine example of Renanthera Imschootiana bore a panicle with four side branches and about 120 flowers.

The Odontoglossum house was gay with bloom, and included numerous forms of O. crispum, noteworthy among them being the varieties Colmanianum, with a large deep cinnamon blotch on each segment, castaneum, with a large cinnamon-brown blotch on the sepals and lip, Mary Colman, a very fine form with a large blotch on lip and sepals, the latter being tinged with pink, Elinor, with many small blotches on the sepals, and unspotted petals, Colmaniæ, a beautiful white, Richard Knight, with a very large blotch on each segment, caudatum, with the petals caudate-acuminate at the apex, and others. One fine O. crispum had three spikes and a seed pod on it, this being the third year it has borne seed without injury. We also noted O. × elegans Pollett's var., O. × warnhamense, O. polyxanthum, O. × excellens, a good O. × Ruckerianum, O. Hunnewellianum, some pretty forms of O. × Adrianæ, including the handsome Gatton Park var., O. × Andersonianum having a spike with five side branches and 32 flowers, O. × Wilckeanum The Don, with a spike of 13 flowers, the yellow O. Hallii, var. E. Ashworth, having the blotches nearly suppressed, and numerous other interesting things. There were also many good Masdevallia Veitchiana, a fine M. × Pourbaixii with 34 flowers, the rare Miltonia læve, Oncidium monachicum, some good O. macranthum in bud, Cymbidium Lowianum, one fine plant having about 15 spikes and 200 flowers, the yellow C. L. concolor, fine examples of C. × Lowio-eburneum, and two plants of a secondary hybrid from C. Lowianum crossed with C. × eburneo-Lowianum, and showing a marked approach to the original parent.

The Cymbidium house contained a lot of seedlings and plants of most of the well-known species, while two Dendrobium houses were filled with healthy plants in various stages of growth. Calanthes were growing vigorously in a Melon house.

We might have extended our notes much further had time permitted. The progress being made in hybridisation is very rapid, and this includes the Odontoglossums, a large number of seedlings being now present in various stages, which we hope to say more about later. The collection generally is in excellent condition, as may be inferred from the splendid groups which appear from time to time at the R.H.S. meetings. Mr. Jeremiah Colman takes a great personal interest in the collection, which, under Mr. Bound's able management, has come so rapidly to the front.

EPIDENDRUM BELIZENSE.

ANOTHER interesting Epidendrum of the Encyclium section can now be cleared up. As long ago as July, 1889, a plant was received for identification from Messrs. J. W. Steel and Co., of Chigwell, Essex, with the information that it had been received with some plants of Brassavola ("Lælia") Digbyana. It was seen to be near E. alatum, Batem., but no name could be found for it. The plant was kept, and has since flowered periodically. It now proves to be E. belizense, Rchb. f., a species described in 1877 (*Linnæa*, xli. p. 78), from the collections of John Day, Esq., and W. Wilson Saunders, Esq. Reichenbach described it as allied to E. ionosmum, Lindl., and the flowers as like those of E. aromaticum, Batem., but larger, and olivaceous with some purple stripes and spots on the lip. An attempt to trace this plant led to the discovery of a drawing (*Day Orch. Draw.* x. t. 16), and a careful painting with analysis of a single flower agrees exactly with Messrs. Steel's plant. Mr. Day has recorded on the drawing: "Imported from Belize in 1864," and thus the country also agrees. This drawing has been authenticated by Reichenbach himself. There is in the Herbarium a dried specimen of a plant which flowered at Kew in April, 1864, which is probably a form of the same species, though the sepals and petals are rather shorter. The country is not known, and on the sheet Reichenbach has written "confer E. oncidioides," but it does not agree with Reichenbach's plant of that name. The flowers of this species are smaller than in E. alatum, Batem., but the rather elongated sepals and petals, and obtuse undulate front lobe of the lip indicate this as the true affinity of the plant. The flowers are about 1½ inches across, the sepals and petals dusky brown, and the strongly three-lobed lip yellowish white, with some short purple lines at the base of the side lobes and on the disc of the front lobe. It grows a little over a foot high.

R.A.R

THE HYBRIDIST.

ODONTOGLOSSUM × ASTARTE.—A hybrid raised in the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, from O. Harryanum ♀ and O. tripudians ♂. It is a small plant, producing at present a two-flowered raceme. The form is said to be somewhat poor, the segments being rather narrow, and the petals standing forward at an angle of 35° to the flower, but the lip is a fine feature. The sepals are brown, with yellow tips and two bars that do not extend to the margin, and the petals are similar with the addition of some violet-purple, shaded into the basal marks. The lip has a white ground, but the lower two-thirds is heavily spotted with deep lilac, which almost suppresses the yellow crest, and the

apex is somewhat broadened. The central keels are more elongated than in most hybrids. The column is white, with very small lacerate column wings, slightly marked with brown.—Crawshay in *Gard. Chron.* 1907, ii. p. 42.

ODONTOGLOSSUM × ASTRÆA.—Raised in the same collection from a natural hybrid O. × Fascinator ♀ and O. × Wattianum Crawshayanum ♂. It is said to have inferior form, but the colour scheme is pleasing. The general colour influence comes from the seed parent, which was creamy-yellow, lightly spotted with rose, but the form is more like O. Lindleyanum. The sepals are greenish yellow, with a little rose-suffusion, one brown blotch at two-thirds distance from the base, a broken line of spots round the margin, and an incipient inferior bar made up of few spots. The petals are rosy-yellow, with a smaller blotch placed as in the sepals. and thickly spotted in their lower area. The lip is similar to O. Lindleyanum, but smaller, and the ground colour white, with one large spot and a few smaller ones on each shoulder. The column is almost like that of O. Lindleyanum. The cross was made in 1901, and only one new plant has at present bloomed.—Crawshay, *l.c.* p. 42.

ORCHIDS IN SEASON.

SEVERAL beautiful Orchids are sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith. Lælio-cattleya Clive, Cambridge Lodge variety, is a large and very brilliant form, with a broad and very dark lip, and a deep orange-yellow throat. It was raised in the collection. Cattleya Mossiæ Reineckeana is a well-known and very charming variety. Maxillaria ochroleuca is from a plant carrying 80 blooms. and when seen in such a condition is very effective. Stelis Miersii is a curious Brazilian species bearing numerous very small green flowers, and rather narrow leaves. Paphiopedilum × Zeus, raised in the collection from P. callosum × ciliolare, is good in colour and shape, while the petals are beautifully spotted. The others are P. Lawrenceanum atrorubens, P. superbiens, Demidoff variety, and P. Curtisii, Cambridge Lodge variety, all well-known and beautiful forms.

An interesting series of Orchids is sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon. It includes fine blooms of the striking Cycnoches chlorochilon, Anguloa Clowesii, Paphiopedilum Parishii, Odontoglossum Lindleyanum and Schlieperianum, a spike of the brilliant Cochlioda Nœtzliana, Miltonia candida and Riechenheimii, Masdevallia muscosa and the rare M. civilis, Pleurothallis elachopus and Grobyi, Chysis lævis. Polystachya laxiflora, Physosiphon Loddigesii and Epidendrum cochleatum. Mr. Neale has evidently a very representative collection.

A flower of the beautiful white Cattleya Eldorado Wallisii is sent from the collection of Sir John Edwards-Moss, Thamesfield, Henley-on-Thames. The deep orange-yellow throat of the lip forms a most effective contrast with the rest of the flower.

STANHOPEA × WOLTERIANA.

A FLOWER of the large and handsome Stanhopea × Wolteriana (*O.R.* xiii. p. 272) is sent by M. Paul Wolter, who remarks that it was raised from S. Martiana × S. tigrina, and that several plants have now bloomed, some being very light yellow, others darker yellow, with a considerable amount of variation in the colour of the spots. The flower sent measures 5½ inches from tip to tip of the lateral sepals, which are two inches broad. The dorsal sepal is longer and narrower. The colour is honey yellow, with many large red-purple blotches from base to middle. The petals are undulate, three inches long by ¾ inch broad, and the colour honey yellow with a few spots, and a very large deep red-purple blotch at the base. The hypochil of the lip is 1½ inches broad, and deep yellow, with a deep red-purple blotch on each side, while within the lower half is deeply suffused with the latter colour. It is a very large and handsome hybrid, in which the influence of S. tigrina is very marked. The flowers are strongly perfumed. M. Wolter remarks that Stanhopea seedlings grow rapidly.

NOTES.

TWO meetings of the Royal Horticultural Society will be held at the Horticultural Hall, Vincent Square, Westminster, during August, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. On September 3rd, the date of the succeeding meeting, a lecture will be given by Mr. F. W. Moore, V.M.H., of Glasnevin, on Lesser Known Orchids, with lantern slide illustrations.

There will be no meeting of the Manchester and North of England Orchid Society during August, the next meeting being fixed for September 19th.

"A group of Hardy Orchids in Mr. Heinrich's Garden in Bavaria" is illustrated in *The Garden* for July 20th (p. 347). It represents a very fine group of Cypripedium Reginæ (spectabile) with an aggregate of 165 flowers, many of them twin, and in one case three flowers are shown on the same stem.

A very fine specimen plant of Odontoglossum crispum from the collection of Major G. L. Holford, Westonbirt, Tetbury, has also appeared

(*Gard. Mag.* 1907, p. 527, with fig.). It was grown from a single pseudo-bulb cut off in the autumn of 1904. It then produced three breaks, and the following year five, while in 1906 no fewer than thirteen appeared. This year the plant has produced twelve spikes with an aggregate of 88 flowers. Mr. Alexander received a Cultural Commendation for it at the R.H.S. meeting held on June 25th last.

ORCHID PORTRAITS.

BRASSOLELIA DIGBYANO-PURPURATA KING EDWARD.—*Journ. Hort.*, 1907, ii. p. 27, with fig.

BULBOPHYLLUM GALBINUM, Ridl.—*Gard. Chron.* 1907, ii. p. 42, fig. 14.

COELOGYNE ASPERATA.—*Gard. Mag.* 1907, pp. 485, 486, with fig.

LÆLIO-CATTLEYA ANDROMEDA.—*Garden*, 1907, i. p. 323, t. 1328.

LÆLIO-CATTLEYA CANHAMIANA ALBA.—*Journ. Hort.* 1907, ii. p. 76, with fig.

LÆLIO-CATTLEYA FIRMIN LAMBEAU.—*Trib. Hort.* ii. p. 371, t. 48.

LISSOCHILUS GIGANTEUS.—*Journ. Hort.*, 1907, ii. p. 52, with fig.

MILTONIA VEXILLARIA CHELSIENSIS.—*Journ. Hort.* 1907, ii. p. 3, with fig. ("M. chelsiensis superba"); *Garden*, 1907, i. pp. 344, 345, with fig.

ODONTOGLOSSUM CRISPUM (specimen).—*Gard. Mag.* 1907, p. 527, with fig.

ODONTOGLOSSUM GLORIOSUM.—*Bot. Mag.* t. 8142, fig. 5.

ODONTOGLOSSUM × LEEANUM, Rchb. f.-*Bot. Mag.* t. 8142.

ODONTOGLOSSUM TRIUMPHANS.—*Bot. Mag.* t. 8142, fig. 6.

ORCHIS LATIFOLIA.—*Gard. World*, 1907, p. 502, with fig.

SELENIPEDIUM BOISSIERIANUM.—*Journ. Hort.* 1907, ii. p. 51, with fig.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired* (*abroad, reply postcards should be used*). *Subjects of special interest will be dealt with in the body of the work*].

H.L.V. We think the spotting on Cypripedium Euryades must have been caused by drip last winter, especially as other plants are free from disfigurement. The mischief is seldom seen until afterwards, when blackening of the tissue has taken place. It may not recur.

H.H. Miltonia Reichenheimii and Odontoglossum Lindleyanum.

J.W.P. The true Epidendrum alatum, Batem. The name has been several times wrongly applied of late.

Several notes are unavoidably held over till next month.

ERRATA.—We regret that an error crept into our Temple Show Report. It was a Gold Medal that was awarded to Jeremiah Colman, Esq., for his fine group, not a Silver Cup, as stated on page 174. Cypripedium bellatulum Princess Clementine there mentioned was exhibited by Messrs. Charlesworth & Co.

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Fig. 1. **Fig. 2.** **Fig. 3.** **Fig. 4.** **Fig. 5.**

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Fig. 3.—B pattern, legs fully extended to take heavy specimen plant, swing top tilted to give good front view, maximum height.
Fig. 4.—B pattern. Side view showing the greatest angle at which plant can be tilted.
Fig. 5.—B pattern. Maximum height, swing top ¼ tilted.

Figs. 2, 3, 4, & 5 are illustrations of the same stands differently adjusted.

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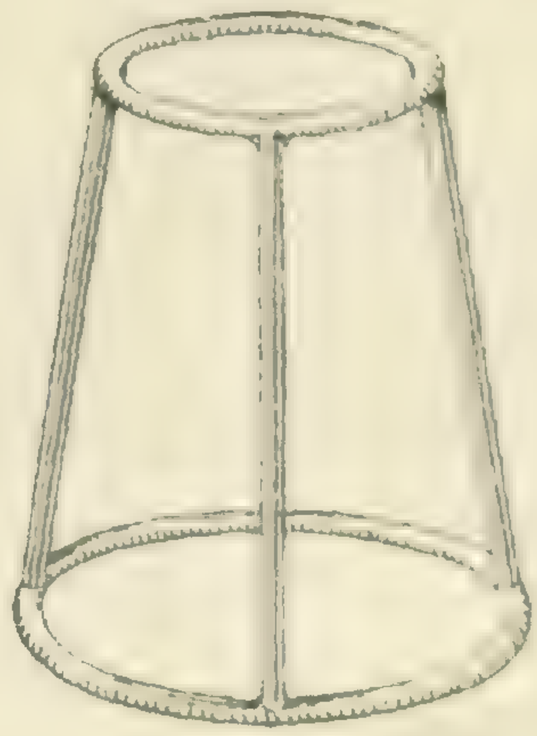

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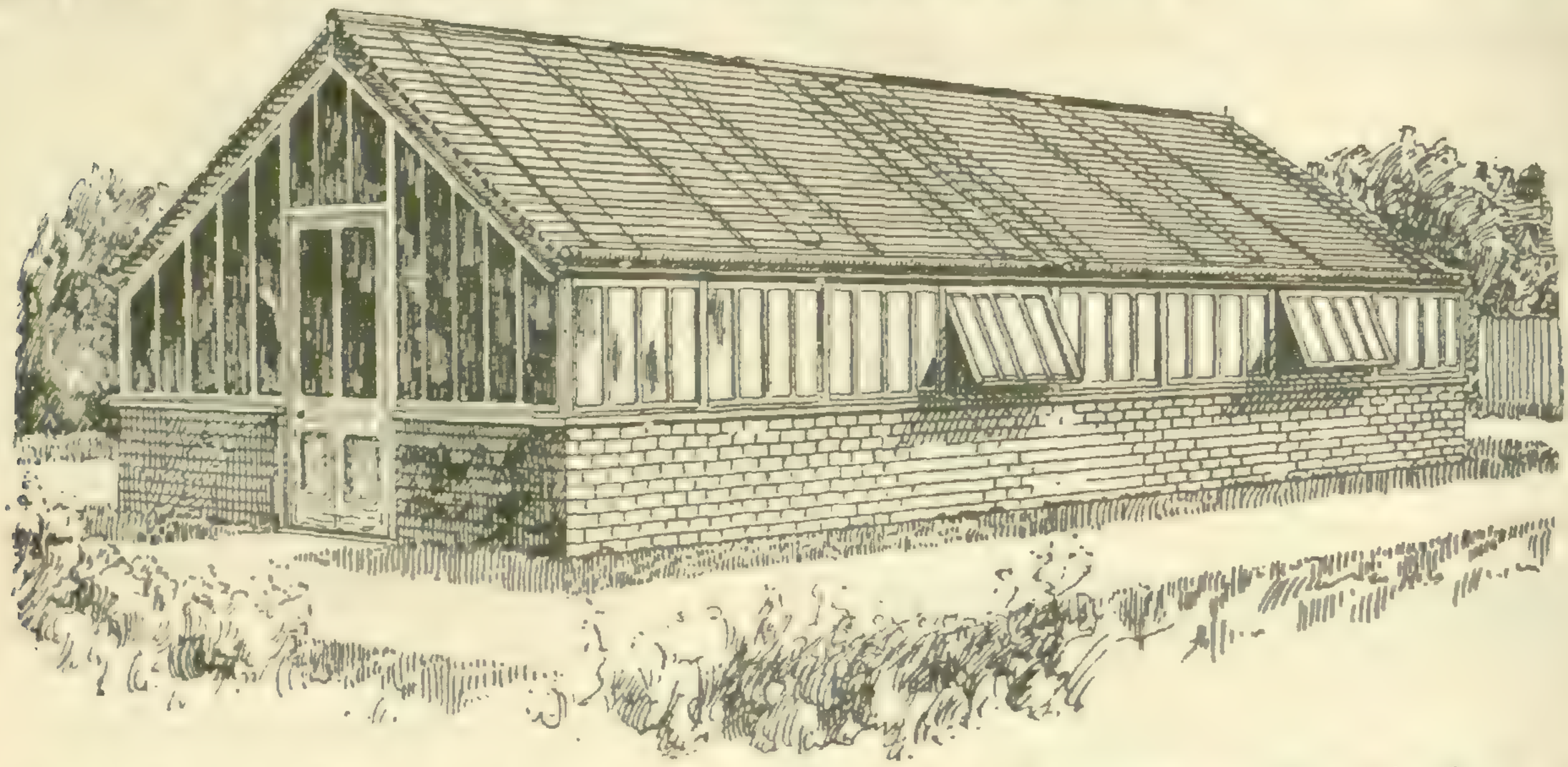

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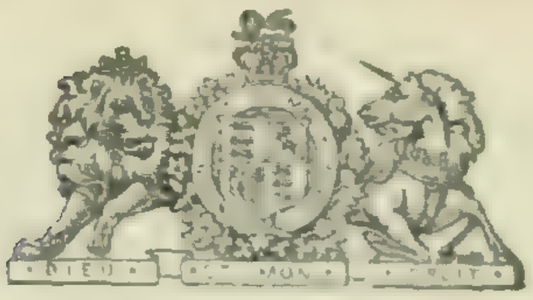

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An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *SEPTEMBER*, 1907. [No. 177.

DIES ORCHIDIANI.

MOST of the "surprises" of late years among Orchids have been due to the efforts of the hybridist, but there have been a few exceptions, and one of these is the glorious new Dendrobium regium, which appeared at the Royal Horticultural Society's meeting on August 6th last from two different collections, a First-class Certificate being awarded in each case. "New" is perhaps not the exact word, for the species was described about five years ago, and two years later a single plant flowered at Kew, and was figured in the *Botanical Magazine* (t. 8003), though little further was known about it. Now, however, an importation of it has been secured, and the species is likely to become generally dispersed. Out of bloom it bears a considerable resemblance to D. nobile, but the flowers are larger, and very different in colour, while the fact that they appear in summer probably indicates the necesssity for somewhat different cultural treatment. This, however, remains to be proved. As regards shape, the flowers may be compared with the very best forms of D. nobile, but they are larger and the petals are broader, while the absence of a maroon disc gives them a very different appearance. The colour is brilliant rose-purple with a lemon-yellow throat to the lip, becoming paler at the margin, where it merges into the other colour. The flowers are borne in axillary fascicles as in D. nobile. I hope it will prove amenable to cultivation, for it is a glorious thing and superior to anything which has appeared for a long time. It should be much sought after for hybridisation purposes, though its season of flowering may limit its usefulness in this respect. The appearance of occasional flowers out of season, however, may afford opportunities for unexpected crosses, and in any case our gardens have secured another Dendrobium of remarkably handsome character.

Hybridisation among Orchids continues to progress with rapid strides. Scarcely a meeting of the R.H.S. is held without the appearance of some novelty, and some of them pass almost unnoticed which a few years ago

would have made quite a stir or received a First-class Certificate. Rapid strides are being made among Odontoglossums, and quite a number have already flowered and been recorded this year. Foremost among them must be mentioned the three striking forms from M. Vulysteke, which were figured on page 209, each of which received a First-class Certificate at the Temple Show. The novel violet-purple colour introduced in O. × cœruleum and O. × gandavense came as a surprise, of which there may be many more in the future. Mr. Crawshay has also flowered several interesting things, whose decorative value can be better judged in the future, when the plants become stronger. Several others might be mentioned, especially the blotched forms of O. crispum raised by Messrs. Charlesworth and a few others, which are evidently only the first of a long series.

———

The articles at pages 225 and 228 are particularly interesting in this connection. I have long been profoundly puzzled as to why Odontoglossum seedlings were so difficult to raise, for they obviously germinate freely enough in a wild state, and an explanation once made by one who had succeeded that he did not know why, or how his present treatment differed from that of the days when he could not get a seed to germinate, only deepened the mystery. The necessity for the presence of some special fungus hardly met the case, for where Odontoglossums are grown this fungus must be there all the time, so the cause must lie deeper. Now I begin to see daylight. It is all very well to say it is a matter of getting the conditions right —anybody could say that—the question is what are the right conditions? I need not repeat them, but anyone who is interested in the raising of seedling Odontoglossums—and who of my readers is not?—should study the articles in question. When we are told that at Streatham Odontoglossums are now raised with almost the same ease and certainty as Cattleyas, we can realise that the key of the situation has been found. It is not altogether a question of growing Odontoglossums well, for some who have succeeded in that have failed to grow seedlings with any degree of certainty, in which connection the experience of Messrs. McBean is interesting, and points to the need for rather more shade and humidity for young seedlings than is generally given to established plants. In order to secure this special "cases" are provided, which Mrs. Thwaites has not found necessary, probably because such conditions are secured in the whole house in which the seedlings are grown. Double shading, when necessary, and constant attention to the humidity of the atmosphere, by spraying and damping all available surfaces, would naturally secure this. Under such conditions the seedlings make rapid progress, and after reaching a certain stage they are less susceptible to injury from fluctuations of temperature and humidity.

But whatever the cause, seedling Odontoglossums are now being raised in enormous quantities, and the harvest is becoming increasingly abundant every year.

I am afraid this Hybridisation question will shortly involve us is further difficulties in nomenclature. The other day I dropped across the name "Lælia Purple May," and wondering what could be its precise significance, it gradually dawned upon me that as it was a hybrid between L. purpurata and L. majalis, this must be the method of indicating the fact. Almost before recovering from the shock I encountered "Brassolælia longiciliare," a hybrid between Lælia longipes and Epidendrum ciliare. The intention was still more obvious, but it recalled a suggestion made some years ago that the hybrid between Cattleya Trianæ and Lælia anceps should have been called "Lælio-cattleya Triceps." from its parents, to which I objected that the plant was not "three-headed." On looking the matter up I find that it was twelve years ago (*O.R.* iii. pp. 260, 261), and I then remarked "whenever such names have a definite meaning of their own, or for any other cause are misleading, they ought to be avoided." The remark still holds good, and as the name longiciliare applied to a plant would indicate the presence of ciliæ of more than average length, it should not be applied to a plant having no ciliæ at all. It seems to be a form of the "Jumble name," alluded to in my last notes (p. 98), which, if sometimes admissible, can easily be carried too far. Unless we recognise that some names cannot be suitably combined in abbreviated form, we may shortly have "Purple Moss," "Purple Men," and goodness knows what besides.

Another difficulty is that pointed out on page 181, which may be briefly summarised as "too many names," or distinct names for things ostensibly different but really identical. The idea that the same result can be obtained by two different roads among secondary hybrids is not new, but it might surprise some hybridists if the result of crossing Odontoglossum × crispo-Harryanum with O. × ardentissimum proved identical with that from crossing O. × Rolfeæ and O. crispum, yet an analysis of parentage shows the composition of the two crosses to be identical. Such a contingency does not apply to primary hybrids, a fact which emphasises the increased difficulty entailed in the nomenclature of secondary hybrids and those of more complex parentage.

Another difficulty is the increasing number of seedlings of unknown or erroneous parentage. So many seedlings are now distributed in various ways before they flower, either without record of parentage or with a record that ultimately proves erroneous, that the question of name becomes

bewildering. In many cases nowadays the parents are themselves of hybrid origin. When the seedlings flower names are of course required, and so some poor expert receives a flower, perhaps with suggestions of a resemblance to several different species, and he is asked to determine the parentage. Perhaps the influence of say Lælia cinnabarina is unmistakable, but he is uncertain whether it came from that species direct or through one of its hybrids, and for the life of him he cannot tell which Cattleya was the other parent, for he thinks he sees resemblances to two or three. The proverbial variability of secondary hybrids increases the difficulty, and perhaps the poor bewildered expert suggests two or three alternatives, but admits that he cannot solve the problem. A stray seedling will often be recognised if the raiser retains it himself, and knows the crosses he has made, but when it flowers first in a strange collection it is often a very different matter. No wonder the nomenclature of hybrids presents some difficulties when these different points are considered.

———

The following, which I have received from a correspondent, is interesting in this connection. I had formerly alluded to the offer of "Orchid seeds at a penny a packet," and my correspondent, who is anxious to try to raise a few seedlings, sent for six penny packets. He encloses a sample in one of the original packets, which states :—

"ORCHIDS.—GREENHOUSE. 1 FOOT.

"The seeds enclosed are mixed with the dust of seed capsules. The seed is almost microscopic. Mix with a little sand and scatter on rough piece of peat. Place in moist greenhouse. Temperature 60 degrees. Seed of Orchid is slow in germinating and rather difficult to get up."

———

The vendors wrote that they simply supply the mixed seed as obtained from a famous grower, and they do not know what sorts are included, and they added :—"It is really offered as a curiosity, and practical Orchid growers should understand this. . . . We always candidly tell Orchid growers that the seed should not be taken seriously." My correspondent remarks that he has nothing to complain about, and he has had quite six pennyworth of amusement out of the matter.

———

If seedlings should be obtained it will be curious to know what they are. Seeds of Cypripediums and Odontoglossums were desired, and the samples were said to contain both. Of course these require different treatment, so that if the seed is good, and my correspondent clever enough, he may vary the results according to the method of treatment adopted. It is a delightfully free and easy method of Orchid culture.

Is Lælia majalis about to appear in a new character? It was being offered for sale at a recent R.H.S. meeting with the following interesting leaflet:—

"LÆLIE MAJALIS.

"A most beautiful and hardy Orchid which we are selling, in order to introduce them to the public, at from 1s. each and upwards. This is the lowest price at which Orchids have been sold in this country.

"The name Orchid is sufficient to convince people that they are getting something for a shilling, which later on may be worth many pounds.

"The flower of the Lælie Majalis is most beautiful, and either white, red, or yellow in colour, when cut it will last in a perfect condition for weeks together.

"The Orchid is one of the easiest plants to cultivate.

"A simple method of growing them is to set them on some peat moss which is easily obtainable, or crushed bark will do as well, oak bark preferred. Keep warm and moist and no further care will be required, as they will soon attach their roots to this. They will often grow placed on the mantel-piece.

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A few other plants were offered, which unfortunately were not Orchids, though one was said to "grow on trees like Orchids." It was the Fons juventutis, or Fountain of Youth, "novel, strange, and mystifying." It is said to grow "on air and water alone, and merely has to be protected from severe frosts." For "decorating purposes" it is said to have "no equal," and it "produces most beautiful flowers, which remain in bloom for many months. Just imagine a plant living, growing, and blooming for years and years without mould, gravel, soil, or phosphates." It is found "in the great Cyprus swamps, where it is utterly impossible to secure the plants without the aid of a boat; and being frequently discovered many miles from any habitation it is necessary for the gatherers to climb to the tops of the trees and far out to the swinging branches. The natives often lose their lives in gathering them, hence the large sums, frequently many pounds, being paid to secure a small specimen of this remarkable plant. After considerable time, trouble, and great expense, the Sole Importers have secured important leases of large tracts of land where these plants grow, and by a system of rest-houses from the swamps to the settlements and the coasts, we are enabled to supply the public with one of the seven wonders of the world in the kingdom of plant life." Prices 1s. to 2s. each, according to size. How I long to know more about the history of that Lælia.

ARGUS.

ORCHIDS AT FAIRLAWN, PUTNEY.

WE have recently had the pleasure of seeing the collection of H. S. Goodson, Esq., situated at West Hill, Putney, and a few notes may be interesting, as they supplement those taken in the previous autumn by Mr. J. M. Black (*O.R.* xiv., pp. 353-356). Our notes chiefly relate to the plants seen, as other details have been so recently given.

In the large Odontoglossum house we saw a number of O. crispum in bloom, mostly of the unspotted type, and a few of them very promising. Most of them were small plants, flowering for the first time, but among the larger established plants several good spikes of bloom were noticed, including examples with twelve and thirteen flowers, one of these being a very pretty light blush pink form. The flowering of such a batch of plants will afford a good opportunity for selection, as otherwise a great deal more room would be required. A couple of capsules were noticed here, and a plant of O. × amabile with eight buds, also the graceful O. citrosmum, while several of the hybrids that have so recently come to the front were pointed out, though not then in bloom. There were four good plants of the rare Maxillaria venusta in bloom, one having five flowers and buds, the brilliant Cochlioda Nœtzliana, a good Cymbidium Lowianum, Oncidium macranthum, the very distinct O. dasytyle, and a few other interesting things.

In another house we noticed several examples of Odontoglossum crispum and Pescatorei in bloom, with O. luteopurpureum, and examples of Lycaste Deppei and L. aromatica. A good batch of L. Skinneri was pointed out as containing some good varieties.

Near by was a small Warm house, where, among other things, we noticed some frames devoted to seedlings, a few experiments in this direction having been made. The handsome Bifrenaria Harrisoniæ was in bloom, and we were particularly interested to see a plant of the rare Dendrobium Williamsianum in bud.

A house chiefly devoted to Dendrobiums and Cypripediums contains a lot of interesting things, particularly among the latter, where we noted in bloom examples of C. Lawrenceanum, Curtisii, × superciliare, × Swanianum, and others. A plant of C. Sanderianum was in thriving condition, and near by were examples of C. callosum Sanderæ and other things too numerous to mention.

Cattleyas and Lælio-cattleyas are extensively grown, and in one of the houses we noticed good examples of C. Warscewiczii (gigas) and C. Mendelii, C. M. var. Herbert Goodson being a pretty blush pink form with the front of the lip rich crimson. C. × Fabia Goodsoni and numerous others were in sheath, and we noted numerous unflowered seedlings of

various ages. The curious Cypripedium × Harrisianum virescens, was in bud, and among other interesting plants pointed out were C. × Niobe superbum, and two C. × A. de Lairesse. Here was a plant of the rare Cymbidium Huttoni, and we noted a good example of the brilliant Renanthera Imschootiana.

In another Cattleya house some C. Gaskelliana were approaching the flowering stage, and the plant of the handsome Brassolælia Digbyano-purpurata King Edward VII. was pointed out, also a seedling from Lælia majalis × Brassavola Digbyana, from the collection of R. G. Thwaites, Esq., which is expected to flower very soon. Numerous other promising seedlings and certificated varieties were pointed out, also a lot of Cattleya intermedia varieties. Later on a number of fine things will be seen in flower. Some good Cypripedium Godefroyæ leucochilum were in bloom, these and the allied species succeeding well here suspended or on shelves near the glass.

A few plants were found in houses not exclusively devoted to Orchids, and among these we noticed some good Calanthes in a Vinery, and some cool-growing Cypripedes in another house. We also saw paintings of about two dozen choice and certificated varieties which have been framed and hung on the walls of a small study.

This collection has come rapidly to the front, and already contains a large number of very choice varieties. The houses are packed with interesting things, and as seedlings, especially, require a constantly increasing space, the opportunity for selection is likely to present itself. Mr. Goodson and his two sons are very enthusiastic Orchidists, and Mr. G. Day, who has charge of the collection is a thoroughly experienced grower, so that continued progress may be anticipated in the future. Some of the houses, we believe, were not originally designed for Orchid growing, but have been adapted to the purpose, but a great deal can be accomplished when one knows the cultural conditions to be aimed at.

THE HYBRIDIST.

ODONTOGLOSSUM × ARIADNE.—A hybrid from Odontoglossum nobile (Pescatorei) ♀ and O. × Wattianum Crawshayanum ♂, raised in the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, and now flowering for the first time. The plant is at present small, and has produced a spike of only two flowers. The sepals and petals are clear yellow, the former having a small brown blotch two-thirds distance from the base, and the latter two small spots in the same position, the shape most resembling O. Lindleyanum. The lip is paler, and more like O. nobile in shape, with a broad transverse brown blotch in front of the crest, and a brown marginal line and some spots on the basal part. The adnation of the lip.

the crest, and shape of the column wings show the influence of O. Lindleyanum, but the column itself is more like O. nobile. It is one of a series made by Mr. Crawshay from the same seed parent, and is described as showing reversion to O. Lindleyanum in form, with the yellow ground colour but loss of spotting of the male parent.—Crawshay in *Gard. Chron.* 1907, II. p. 101.

ODONTOGLOSSUM × AMNERIS.—Another hybrid from Mr. Crawshay's collection, which was exhibited at the R.H.S. meeting held on August 6th last, and of which a flower has been kindly sent. The parents are O. × cristatellum ♀ and O. × Crawshayanum ♂. The flower bears a considerable resemblance to the latter in shape, the sepals and petals being rather elongated and undulate, and the yellow ground colour largely obliterated by copious dark brown blotches, which in the upper half limit the yellow to the extreme apex and a very narrow margin. The lip is broad, slightly pandurate, and much fringed in front, with a yellow ground colour, a very large dark brown area in front of the crest, and a few marginal and basal spots and blotches. The crest is very spiny, thus showing the influence of O. Harryanum, and the column wings are light yellow and somewhat denticulate.

ODONTOGLOSSUM × AMONASRO.—This also was exhibited at the R.H.S. meeting held on August 6th last, and Mr. Crawshay states that the parents are O. × cristatellum ♀ and O. Harryanum ♂. A flower now sent has almost exactly the typical cristatellum crest, while the general shape and colouring show a close approach to the same parent, though the segments are rather longer. The lower third of the sepals and over half the petals are yellow, prettily spotted with dark brown, the rest being entirely of the latter colour. The lip is broad, fimbriate in front, and yellow with a large purple brown blotch about the centre, some distance in front of the crest. The column is short, with broad yellow slightly denticulate wings, blotched with brown at the margin.

BRASSOLÆLIA THWAITESII.—A distinct and striking hybrid raised in the collection of R. G. Thwaites, Esq., of Streatham, from Lælia grandiflora (majalis) ♀ and Brassavola Digbyana ♂, and exhibited at the R.H.S. Meeting held on August 6th last. The flower, which has been kindly sent us, is most like the Lælia parent in shape, having a general resemblance in shape and details of the flower, except that the colour is lighter. The sepals are about four inches long, rather narrow, and tinged with lilac, and the petals much broader about the middle and rather darker in colour, while the strongly three-lobed lip is white, tinged with rose-pink near the margin of the lobes, which are also very minutely fringed. The latter character with the paler colour and slightly modified shape show the influence of the pollen parent.

ODONTOGLOSSUM CRISPUM VAR. LEONARD PERFECT.

THE annexed figure represents the very handsome Odontoglossum crispum var. Leonard Perfect, which recently flowered in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (see p. 161), and is reproduced from a photograph taken and kindly sent by Mr. H. J. Chapman. This plant is part of the original one, which was exhibited by Messrs. Sander & Sons at the Temple Show in May, 1906, it having been twice divided since, and a piece which was sold at the Chillingham Castle sale of duplicates in March last fetched 700 guineas. Messrs. Sander's plant

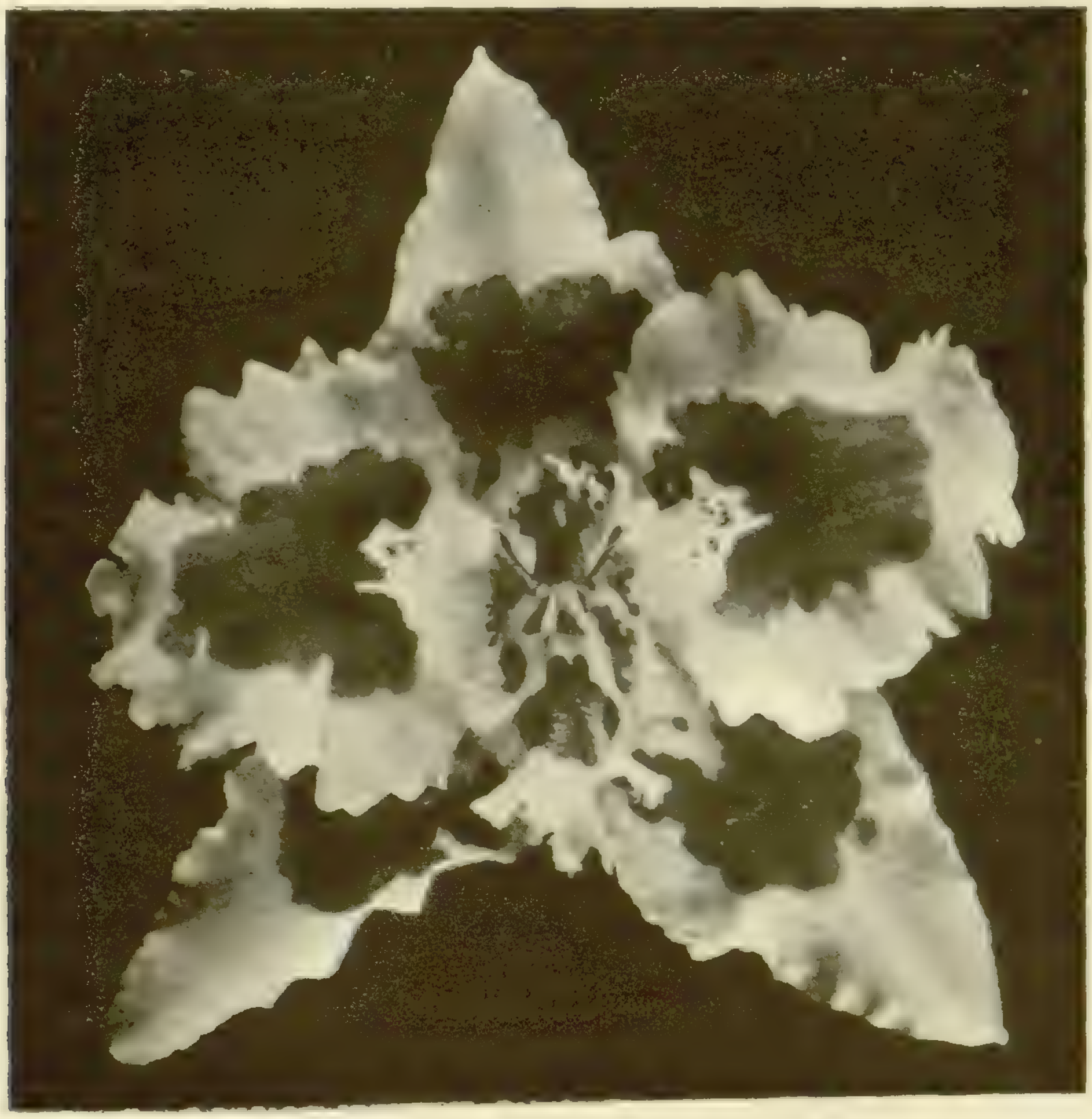

Fig. 30. ODONTOGLOSSUM CRISPUM VAR. LEONARD PERFECT.

carried a compact spike of several blooms, and was greatly admired. The flowers are of great size and substance, and of excellent shape, while the markings are quite unique in character. They take the form of a large roundish cinnamon-brown blotch on each of the sepals and petals, and several smaller ones on the lip. The ground colour is white, forming a broad margin to the segments, which sets the blotches off to great advantage. The petals are particularly broad and round. It is a gem of the first water.

CALENDAR OF OPERATIONS FOR SEPTEMBER.

By W. P. Bound, Gatton Park, Reigate.

Odontoglossums.—This is the most important batch of Orchids that commands attention this month, and it is now that the general overhauling should take place. I have written before this year that some would be ready for potting during most months of the year, but it is now that the majority will be ready, and it is well to start at one end and carefully select any that require potting or surfacing. When this is done no plant is missed. There will be many that want some of the back portions removed, and when this is done they may be repotted into a smaller sized pot. It is always easy to pot a plant on.

I have never seen the collection where there are not some plants that are not so good as they were last year, and such will be best suited if given a smaller receptacle. Then specimens are found where the leads have approached the rim of the pot and there are none centrewards, and when that is the case I prefer taking it carefully apart, cutting away all the old bulbs, and remaking the specimens, rather than potting it on to give the leads room to develop. Others may have made grand bulbs, the compost being still in a sound state, yet without room for further development. Such will be best suited by only having the roots liberated a little, the surface material removed, and a slightly larger pot given. All must be treated individually, for what is right for one may be wrong for the next. Such a great deal depends on the constitution of the plant.

At this potting there is sure to be a good number of back bulbs cut off, and if the variety is of sufficient merit to make it desirable to increase the stock, these back bulbs should be suspended in a warm, dry, and light shed, just the reverse of their growing quarters, and given no water. Very soon they will emit a new lead, and as soon as the growth is visible pot it up and place them with the others in their own house. I have found quicker results from this method than when we laid them on the stage under the plants, and certainly we have had a larger percentage come away. For compost, &c., I would refer to the Calendar for April.

Masdevallias.—Many of these, when well grown, are very decorative, and all are most interesting, and although they, like many other varieties, have not been very popular of late, there is every reason to believe they will again be extensively grown. The present season is a most suitable one for giving the plants a thorough overhauling, potting those that require it, and surfacing others that are in a sound state, using a compost of good fibrous peat and sphagnum in equal parts, with plenty of coarse sand and small crocks. Ordinary pots are quite suitable for such as can be accommodated in one not more than seven inches in diameter, but larger plants will look

better if they are given fairly deep pans, and if these have no side perforations so much the better. Give a good drainage, first placing a few crocks over the aperture, then a liberal amount of bracken rhizomes, deciding the quantity by the amount of roots each individual plant has. Some varieties are much deeper rooting than others, which should be borne in mind when deciding the quantity of drainage.

Whenever a plant shows signs of decay in the centre it is quite time it was pulled apart, and the decaying portions removed. The outer parts can then be remade into a specimen or potted up separately, at the grower's discretion. When it is desirable to rebuild a specimen, be quite sure there is some compost between each section. If the plant is not a large one it can be built in the hand, and potted just as if it was one plant. By this means the plant can develop all ways. Plants that are in a thoroughly sound state and have reached the edge of the receptacles will be benefited by being given a shift into a larger pot, but it is better to err on the side of too small pots rather than to over-pot, as during the winter months they resent being in a wet state for any length of time. When a large receptacle is used for a comparatively small plant the bulk of the material takes too long to dry after being watered, and much harm accrues. If on the other hand the plant has made a great deal of root, and is not afforded some fresh material and more root room, the leaves will present a sickly yellow appearance, and the flowers will not be up to the standard, so this, like many other matters relating to Orchid culture, must be left to the individual to decide between plant and plant. After potting water must be very carefully given, till the new roots have well entered the new material.

Give them a position in the Cool or Odontoglossum house. We prefer for these the lightest part of that structure. I do not mean to say they want direct sunshine, but in most houses the light when shaded is stronger at one end than the other, or one side than the other, and that is the position I prefer for Masdevallias.

The beautiful species, M. tovarensis, requires a rather warmer house, also some of the hybrids from it, such as M. × McVittiæ and M × Hincksiana. In potting these I like to add a little good fibrous loam. The species of the Chimæra section will require teak baskets, on account of the flowers being produced in a pendant form, and a position in the Cool intermediate house, where they can be very freely syringed overhead. During the summer season they are benefited by being sprayed overhead on bright days.

When growing freely they require a fair amount of water, but during the short days water must be given very sparingly indeed. I am afraid many of the failures in growing these could be traced to too much water during the winter months. I like to allow the plants to become well dry, and remain

so for several days; then when water is given let it be enough to go thoroughly through the compost. If the plant was really well dry when watered, the compost will very soon be again in a semi-dry state. It is bad policy to give them water in dribbles, and during the winter it will be ample if they are looked over once a week. Speaking generally, if the humidity of the house is well maintained, they should go for two weeks, and perhaps longer, between each watering. The situation, class of house, what the floors are made of, &c., have all to be taken into consideration in determining how long a plant can safely go without water, but if they are looked over once a week, the experienced eye would soon detect any that are suffering from want of water. I consider the winter management by far the most important detail in their culture.

MILTONIA VEXILLARIA.—The new growths on these are now sufficiently forward to enable the annual repotting to be done, using a compost of very fibrous peat and good sphagnum in equal parts, with plenty of coarse sand and small crocks. Not being deep rooting subjects, fill the pots rather more than one-third full with crocks and rhizomes. Before starting to repot, be quite sure they are thoroughly clear of thrip. We have few Orchids that require such constant vigilance to keep them clear of that pest, but if the houses are fumigated regularly every two or three weeks, there should be no danger from that source. If there is any suspicion of their presence, dip the plants in some safe and good insecticide. It is very desirable that they should be grown, at any rate during the winter, in the smallest pot possible, without unduly cramping the roots, and it is very easy to pot on any plant in February that looks as if benefit would accrue from more root space.

I do not advise leaving for February potting any but those that want shifting on, for it is now that the thorough overhauling should be given. The compost on some may be in a very sound state, and if the plant is in a small pot, its only requirement would be a shift on. Such I would now leave alone, but all those that would not be suitable for potting on should now be carefully taken out, and the old compost worked away, preserving every live root and cutting off all dead ones, and then repot, as I have previously said, into the smallest pot possible. Do not firm the material too much, yet avoid spongy potting. So much depends on the amount of fibre the peat contains. The roots can ramify freely amongst the very fibrous material when potting is done moderately firmly, yet if the same degree of firmness was given when a soily peat was used, it would be a solid mass, and not what these require.

After potting has been finished and the plants re-staged, be very careful with the water can, only watering as they become well dry. Much good, however, will be done by seeing that the surroundings are kept well moist, and also on bright days by lightly spraying them over to assist them in

recovering. A position in the Intermediate house is a very suitable one. They greatly resent a stuffy atmosphere at any season. The late flowering varieties should be treated in the same way when the new growths have made a good start.

The propagation of these can be best done by cutting away the leading bulb when the new growth is about to emit roots, taking care to see that as many as possible of the roots attached to the bulbs are carefully worked out. When this is done do not then disturb the old plant till it has made a new lead. M. vexillaria responds very well to this mode of propagation, and it is really very surprising what fine bulbs can be got the first season. Another method, and a much more risky one, is to cut off very carefully the new growth just as roots are emitted, and these with care will grow away quickly and soon make good plants. When this is done the plant very soon makes another lead, and will oftentimes make up a bulb nearly if not quite as good as would have been expected from its first lead. Whichever method is followed it is all important that they should be kept well shaded, and sprayed over till the roots have made a fair start. It is not much good to keep the material wet till the roots have entered it, as there would be nothing to gain and much to lose by doing so.

When the old plants have made a new lead shake them well out and pot them back. It is also very important that very little water should be given after the leads have been taken away till the new ones emit roots.

EPIPHRONITIS VEITCHII.—This is a very charming hybrid when seen at its best, but, like many others where the parents are so different in habit, it is not one of the best growers with many, yet from time to time some really very fine plants, with large heads of flowers, are seen, making those of us who are less successful envious, and at the same time giving us an impetus to try and do likewise. The present time is a very suitable one to see to any potting or propagating necessary. I consider that the constant making up of young plants from the ærial side shoots is perhaps one of the most important factors towards success. By this means the stock soon increases, and when they are removed the basal growths have a much better chance of growing away and producing good heads of flowers. A compost made up of peat and sphagnum in equal parts, with plenty of small crocks and coarse sand, will meet their requirements. Give a liberal drainage of rhizomes over a few crocks, and pot rather lightly. A position in the Intermediate house should be given, choosing one where they can be very freely syringed, and also where a good deal of light can reach them. At no season do they require a dry treatment, but generally speaking they will keep sufficiently moist at the root from the overhead syringings.

EPIDENDRUMS.—Many species of the scandent section are very effective, lasting in flower for a very long period. Although the flower heads on

some may still be good, it is necessary to thoroughly overhaul some each year, and it is also desirable from time to time to cut back some of the growths that have produced flowers to within six inches of the base. The best results are brought about by not having much, if any, ærial growth, and encouraging those from the base. When the ærial growths are kept well cut out the basal growths come away more freely, and it is from those that the best heads of flowers come. They are not very particular as regards compost, and such a one as advised for Epiphronitis would be very suitable. Give them a position where plenty of light can reach them, in the Cattleya and Intermediate houses, and syringe them very freely overhead. Some very good effects can be brought about by training them on walls or pillars in the warmer Orchid houses, and, if treated thus and planted out, they do wonderfully well, and also provide good material for cutting.

ODONTIODAS.

WHEN THIS remarkable little race becomes more numerous, and is better known, there is a possibility of its equalling, and perhaps excelling, in popularity the much-prized genus of Odontoglossum. Odontiodas have recently evoked much discussion, and a few notes respecting them have already been published, but nothing in the form of a complete list has appeared, hence it may now be opportune to give one. The year 1908 should materially add to the interest taken in the "*new red race*" of Orchids, for there can be little doubt but that the influence of red will be even greater than is that of O. Harryanum, for it will create a new colour in Odontoglossums which will permeate the whole family, and ramify to all the allied genera, as and when the linking-up operation is effected by the hybridist.

Since the time that Odontioda Vuylstekeæ appeared at the Temple Flower Show of May 31st, 1904, and created such a *furore*, almost all raisers of Orchids have taken the matter in hand, and, considering the short time that has passed, great progress has been made, and seedlings of similar and other crosses exist in many parts of England and on the Continent.

Mr. Charlesworth had previously raised plants which in due time bloomed, and were named Odontioda heatonesis, O. Bohnhoffiæ and O. Bradshawiæ. Mr. Stevens, in the "Walton Grange Collection," has also several seedlings of a similar cross to that which produced the fine O. Vuylstekeæ, and some of these should flower in 1908.

In these days, when size of flower and value of plant are the objects, the first results in the primary hybrids will be in many cases disappointing, for the difficulty of raising *upon* a large species of Odontoglossum is great, but to those persons who do not especially consider size and colour, the results

will be equally as acceptable, for they will command a "breeding" value as being far more likely to cross freely upon Odontoglossums than Cochlioda itself, as information hereunder proves, which has been placed at my disposal by J. Bradshaw, Esq., The Grange, Southgate.

Although the reason is not definitely known, it is generally considered that the pollen tubes of a Cochlioda have not the power of freely penetrating the longer column of an Odontoglossum, though this is not an absolute rule, for I have raised plants of O. Hallii ♀ × C. Noetzliana ♂, and O. Hallii has one of the longest columns in the genus.

This brings me to the subject of C. Noetzliana as a pollen parent, about which I wish to clear up a misapprehension in the article in the June issue for 1907 (p. 181). At that time I had plants of three Odontoglossums crossed with C. Noetzliana, hence it was unlikely I should have stated it could not be effected. [We clearly made a mistake in transcribing a hurried note as to the difficulty of utilising this species as a pollen parent—a difficulty we have long known—and the statement attributed to Mr. Crawshay was probably a mental confusion with some earlier one, and would not have arisen had Mr. Crawshay pointed out the advance he had then made in this particular detail.—ED.]

The information regarding crosses with C. Noetzliana as the pollen parent in the "Thwaites Collection" (see *Orchid Review*, August, 1907, p. 227), is most interesting, and corroborates my above made statement regarding the ramifications one may expect. I hope to see many additions to our knowledge herein as time progresses, for if it be possible to raise freely upon Odontoglossums, of course much time will be gained by getting increased size in the primary hybrids, this being proved by the comparison of × O. Vuylstekeæ with any of the others raised by using Cochlioda as the mother parent.

If the reason of our frequent failure with Odontoglossum as the seed parent be as it is supposed, there can be no doubt but that the hybrids will remove much of the disability, and the first seed pod upon O. crispum obtained in this way will be the nearest approach to a scarlet form of O. crispum, which is so anxiously awaited. Mr. Bradshaw has healthy pods upon O. × crispo-Harryanum and O. Rossii fertilised by the pollen of the original Odontioda Bradshawiæ, and these should materially aid in gaining size in the resulting crosses. He informs me that two crispums failed to give pods.

Respecting the failures in this case—and I have examined scores of them—I find that the pollen tube has never penetrated to the ovary, even though the column swells normally, as does the ovary to a less degree, the pollen seems to decay upon the stigma and effect irritation only, and not impregnation.

The records to date will be interesting, hence I tabulate them under different headings. I know of others, but for various reasons do not publish them.

CROSSES RAISED WITH C. NOETZLIANA AS THE MALE OR POLLEN PARENT.

nobile	Vuylsteke ...	Odontioda Vuylstekeæ	
cirrhosum	Thwaites ...	O.R. Aug. 1907, 227.	
Edwardii...	,, ...	,,	
ramosissimum	,, ...	,,	
Kegeljani	Crawshay ...		
Hallii	,, ...		
nobile	,, ...		
Rossii	,, ...		
Uro-Skinneri	Potter ...		
citrosmum	,, ...	Seed sown Dec. 5, 1906.	
Rossii	,, ...		

I have succeeded with other Odontoglossums as the seed parent, but as yet I have not plants that can be written about, though it looks as if this will be possible in the near future.

TABLE OF ODONTIODAS.

Name.	Raiser and Exhibitor.	Exhibition or Publication.
Vuylstekeæ	Vuylsteke ...	Temple Show, May 31st, 1904 (F.C.C.)
heatonensis	Charlesworth ...	R.H.S., March 6th, 1906 (A.M.)
,, St. Vincent...	,, ...	R.H.S., December 11th, 1906 (A.M.)
Bohnhoffiæ	,, ...	R.H.S., September 25th 1906 (A.M.)
Vuylstekeæ	Vuylsteke ...	Dresden, May 5th, 1907.
,, ...	Charlesworth ...	Temple Show, May 28th, 1907.
Bradshawiæ	,, ..	R.H.S., January, 8th, 1907 (F.C.C.)
,, Walton Grange var.	Thompson ...	R.H.S., June 25th, 1907.
Vuylstekeæ Kingsmillii	Fowler ...	*Gardeners' Chronicle*, July 27th, 1907, p. 63.

The last two were raised by Mr. Charlesworth.

DE B. CRAWSHAY.

ODONTOGLOSSUM CRISPUM VAR. SOLUM.

THE unique variety here figured originally appeared in the collection of William Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), and its characters were briefly recorded about two years ago (*Gard. Chron.* 1905, ii. p. 101). It was said to be one of the most remarkable variations yet seen, the lip being wholly claret-coloured, with the exception of a narrow white line at the apex, while the sepals and petals were pure white, except for an occasional dark purple blotch. Shortly afterwards a figure appeared, from

Fig. 31. . ODONTOGLOSSUM CRISPUM VAR. SOLUM.

a photograph by Mr. Stevens (*l.c.* p. 322, fig. 134), this showing a ten-flowered inflorescence, of which the lower flower alone had one large blotch on one lateral sepal and a smaller blotch on the dorsal. The plant, however, had flowered previously, with a seven-flowered inflorescence, a photograph being taken by Mr. Stevens, with a second showing two flowers natural size. All three have now been sent by Mr. Stevens, and we have selected the last-mentioned for reproduction. It shows the two lower

flowers on one side of the inflorescence, but the upper flower had also a small blotch on one lateral sepal. A plant of it was exhibited by Messrs. Sander & Sons at the last Temple Show, and received a First-class Certificate, when we recorded it (p. 176) as "a neat form, having white sepals and petals, and a lip almost wholly dark ruby-purple, forming the strongest possible contrast—a quite unique variety." The varietal name, signifying "alone," was probably given in reference to this unique character, but when the species was figured (as cited above) Mr. Crawshay proposed to change the name to var. callistoglossa, as being more descriptive. The lip certainly is beautiful, but this was not considered as an adequate reason for setting aside the earlier name. The lip is anomalous both in shape and colour, but it is difficult to suggest a cause for the peculiarity. Its beauty will not be called in question.

SOCIETIES.

Royal Horticultural.

A MEETING of the R.H.S. was held at the Royal Horticultural Hall, Vincent Square, Westminster, on August 6th, the day following Bank Holiday, when the display of Orchids was not large, though it included some particularly fine things, and was remarkable for the appearance, from two collections, of the handsome Dendrobium regium (Prain), whose history was given at page 228 of our twelfth volume. This and one other plant received a First-class Certificate, the other awards being two Cultural Commendations, two Medals, and one Award of Merit.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent Lælia × Purple May (majalis × purpurata), a distinct and pretty hybrid, having purplish lanceolate sepals, broader petals of similar colour, and the tube of the lip white, with purple lines extending from the base to the front lobe, which is rich purple in colour. A First-class Certificate was given to Dendrobium regium, a remarkably handsome species from Lower Hindustan, closely resembling D. nobile in habit, but the flowers larger, rose-purple in colour, and the throat of the lip yellowish, without any maroon on the disc. It also flowers at a different season from D. nobile.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), sent a very beautiful plant of Miltonia vexillaria, Hardy's variety, bearing 46 fine rose-pink flowers, having a large purple-crimson blotch at the base of the lip, Lælio-cattleya elegans King Edward, one of the finest deep purple varieties, and a noble specimen of Cattleya × Germania superba, bearing four spikes and an aggregate of thirty-two flowers, to which both a First-class Certificate and a Cultural Commendation were given.

M. Jules Hye de Crom, Ghent (gr. M. Coen), received an Award of Merit for Miltonia vexillaria Lambeauiana, a beautiful pure white variety, with a lemon yellow crest, but without the reddish lines usually seen at the base of the lip of this species.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), received a Cultural Commendation for a remarkably fine specimen of Cypripedium × Lord Derby, bearing eleven spikes and an aggregate of thirty-four flowers.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), received a Silver Banksian Medal for a bright little group, containing several examples of Miltonia Roezlii alba, the fine M. × Bleuana, Lælio-cattleya elegans, the richly-coloured L.-c. Massangeana var. Harry Goodson, a fine form of Odontoglossum crispum, a prettily blotched O. × amabile, Cattleya Gaskelliana alba with three flowers, the very rare New Guinea Dendrobium Williamsianum, a plant whose history was given at page 218 of our last volume, &c.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), sent a very curious little hybrid derived from Lælia longipes ♀ and Epidendrum ciliare ♂, called Epilælia longi-ciliare. It had narrow blush white sepals and petals, and a small yellowish three-lobed lip.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent three seedling forms of Odontoglossum × Queen Alexandra, one of them called variety Imperatrix, having the lip covered with beautiful violet purple blotches. He also sent seedlings called O. × Amneris (cristatellum × Crawshayanum), and O. × Amonasro (cristatellum × Harryanum), which are described on another page.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent the large and richly-coloured Aërides Houlletianum, Fowler's variety.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), sent Brassolaelia Thwaitesii (L. majalis × B. Digbyana), a very interesting hybrid, fairly intermediate in shape, having narrow sepals, tinged with lilac, broader and rather darker petals, and a three-lobed fringed lip, which is white, tinged with rose on the side lobes and apex of the front lobe.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed the handsome Lælio-cattleya Mrs. Gilbert Blount (L.-c. Schilleriana × C. Gaskelliana), having white sepals and petals, tinged with pale purple towards the apex, the throat of the lip lemon yellow, with the sides rose, and the front lobe rich purple-crimson, Cattleya × Minnie (granulosa × Lueddemanniana), having cream white sepals and petals tinged with pale lilac, and the front lobe of the lip bright rose-purple edged with white, Cypripedium × Emperor of India, and C. Godefroyæ leucochilum "His Majesty," a large and handsomely blotched form.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very beautiful group, to which a Silver Flora Medal was awarded. It contained a beautiful example of Mormodes luxatum punctatum, bearing a fine spike of fragrant white flowers, having a purple band and some similar spots on the lip, some good examples of Odontoglossum × Rolfeæ and O. × crispo-Harryanum, the pretty O. × Elaine, Cattleya Gaskelliana alba, C. × F. W. Wigan, and others, some fine forms of Lælio-cattleya callistoglossa, Sophrolælia Marriottiana, Sophrocattleya Chamberlainii, Zygopetalum rostratum, some finely-bloomed examples of Ancistrochilus Thomsonianus and var. Gentilii, Bifrenaria aureo-fulva, Maxillaria marginata, the rare Ionopsis utricularioides, Oncidium trulliferum, O. nigratum, the graceful little Pleurothallis macroblepharis, various Cypripediums, and other interesting things. The handsome Dendrobium regium, previously mentioned, was also represented by two plants, a First-class Certificate being awarded.

Messrs. Hugh Low & Co., Enfield, showed the chaste Cattleya Gaskelliana alba, C. × Parthenia Prince of Wales, Cypripedium × Wiertzianum, the richly-coloured C. × Watsonianum, and a finely-flowered example of Platyclinis filiformis.

At the meeting held on August 20th there was a finer display of Orchids, as many as six medals being awarded for groups, while the coveted Lindley Medal was given to a remarkable specimen of Lælio-cattleya elegans sent by Major Holford. The other awards consisted of two Botanical Certificates, one Cultural Commendation and an Award of Merit.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged a group of six very beautiful hybrids, to which a Silver Banksian Medal was given. They were as follows:—Cattleya × Pittiana superba, C. × fulvescens magnifica, C. × Euphrasia, Westonbirt var., Brassocattleya Madame Jules Hye, Lælio-cattleya Ophir delicata, with very light sepals and petals, a light yellow throat to the lip, and the front lobe light rose, and L.-c. Arethusa (C. Harrisoniana × L.-c. exoniensis). He also sent an immense specimen of L.-c. elegans, grown in a large tub, and bearing thirty fine spikes with an aggregate of 230 large, rich purple flowers, the best spike bearing thirteen. It was a remarkable example of good culture, one of the finest yet seen, and was deservedly awarded a Silver-gilt Lindley Medal.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a group of about two dozen well-flowered plants of the Chinese Habenaria rhodochila, allied to H. militaris, but having an orange-coloured lip and the leaves not mottled as in the latter. A Silver Banksian Medal was awarded. He also sent Polystachya odorata with a ten-branched inflorescence of greenish-white flowers, and a grand specimen of the rare New Guinea

Bulbophyllum longisepalum with fourteen blooms, the latter receiving both a Botanical Certificate and a Cultural Commendation.

Mrs. Temple, Leyswood, Groombridge (gr. Mr. Bristow), was awarded a Silver Flora Medal for a very beautiful group of Disa grandiflora, the plants being well grown, and bearing in the aggregate about 100 flowers. She also sent a fine specimen of Epidendrum Brassavolæ with nine flower-spikes.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), sent Cattleya × Adula var. Colmaniæ (bicolor × Hardyana), a handsome rose-purple flower with intense ruby purple lip.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent a good Cypripedium × A. de Lairesse, and C. × dellense (Mastersianum × Rothschildianum), the latter a fine thing most like C. Rothschildianum in habit, and having the dorsal sepal greenish white, lined with chocolate-brown, the petals greenish, tinged with rose and spotted with chocolate-brown, and the lip somewhat elongated, compressed, and pale reddish brown.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a fine group, to which a Silver Flora Medal was awarded. It contained a lot of showy hybrids, prominent among them being some good examples of Odonto-glossum × Rolfeæ and a hybrid between it and O. Pescatorei, most resembling a very large O. Pescatorei with violet-purple blotches on the sepals. Lælia purpurata × grandiflora (majalis) was also very effective, and an improvement on the latter, which it most resembled. Two plants of Cycnoches Egertonianum viride were interesting, one bearing a long raceme of male flowers, with much toothed lip, the other a short twin-flowered spike of female flowers, with an entire very fleshy lip. The group also contained a fine specimen of Bulbophyllum virescens, with an umbel of ten flowers, closely resembling B. Ericssoni, figured at page 233 of our last issue, except in having unspotted flowers, the handsome Chondrorhyncha Chestertoni, Angræcum Scottianum, Zygopetalum crinitum cœruleum, the rare Z. Burkei, Brassia guttata, the handsome Scuticaria Steelii, with long, whip-like leaves, and other interesting things. An Award of Merit was given to Miltonia Schrœderiana, Heaton variety, a particularly fine form, having greenish white sepals and petals heavily blotched with chocolate-purple, the basal half of the lip deep magenta-rose, and the apex white. A Botanical Certificate was given to Polycycnis Charlesworthii, bearing a long arching inflorescence of about fifty flowers, with yellowish segments closely mottled with light brown, less spotted narrow petals, and a brownish lip with some white hairs.

Messrs. Armstrong & Brown, Tunbridge Wells, staged a very fine group, to which a Silver Flora Medal was given. It contained a good

selection of Dendrobium Phalænopsis, some fine Lælio-cattleya bletchleyensis, half-a-dozen of the new L.-c. George Woodhams (L. purpurata × C. × Hardyana), with large rose-purple sepals and petals and a deep claret-purple lip, some good white Odontoglossum crispum, a fine specimen of Maxillaria tenuifolia, three plants of Bulbophyllum Dearei, Masdevallia Davisii, the bright rose-coloured Eulophia guineensis, Cypripedium × Maudiæ, C. × Bella, C. × Harrisianum albens, C. × Braceyanum (superbiens × Lord Derby), approaching the latter in general character but with broader petals, several hybrids of C. Charlesworthii, C. Dayanum, and other interesting things.

Messrs. Sander & Sons, St. Albans, also received a Silver Flora Medal for a fine group, containing a fine selection of Lælio-cattleya callistoglossa, L.-c. bletchleyensis, Odontoglossum × Rolfeæ, Cattleya × Lord Rothschild, and C. × Davisii (velutina × Hardyana), the latter a charming thing and showing a considerable amount of variation. There was also a fine series of the brilliant Disa grandiflora, Cypripedium × Niobe magnificum, C. × Watsonianum, C. × Mary Beatrice, Miltonia Roezlii alba, M. Regnellii citrina, Galeandra lacustris, Promenæa xanthina, Catasetum macrocarpum, Stanhopea oculata, and other good things.

Messrs. Hugh Low & Co., Enfield, staged a small and pretty group, containing some good Lælio-cattleya Ingramii, Cattleya granulosa, C. Gaskelliana alba, C. Dowiana, C. Grossii, Odontoglossum Pescatorei, O. Schlieperianum, O. purum, and various Cypripedes.

Messrs. J. & A. A. McBean, Cooksbridge, sent Oncidium macranthum nanum, bearing a short scape with a dozen of its handsome yellow flowers, and Odontoglossum Harryanum grande, a very large, dark-coloured form.

Messrs. James Veitch & Sons, Chelsea, sent the handsome Cypripedium × Jas. H. Veitch (Curtisii × Stonei platytænium), and C. × W. R. Lee.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING was held at the Coal Exchange, Manchester, on July 25th last, when there was a moderate display of Orchids, and the awards consisted of four Bronze Medals and four Awards of Merit. The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. Cowan, Keeling, Parker, P. Smith, Warburton, Ward, and Weathers (hon. sec.)

M. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), received a Bronze Medal for a good group of Cypripediums, and an Award of Merit for C. Curtisii splendens.

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), received a Bronze Medal for a good group of Orchids, consisting largely of Odontoglossums.

J. Macartney, Esq., Bolton, sent a few good Cypripediums, receiving an Award of Merit for one called C. × Donald.

W. Bolton, Esq., Wilderspool (gr. Mr. Cain), sent a small group of Cypripediums.

Messrs. A. J. Keeling & Sons, Westgate Hill, Bradford, received a Bronze Medal for a good miscellaneous group, and Awards of Merit for the striking Chondrorhyncha Chestertoni and Cypripedium Elliottianum superbum.

Mr. J. E. Sadler, Newbury, Berks, staged a small group of Odontoglossums.

CATTLEYA × BAHIENSIS.

When I prepared my paper on "Natural Hybrid Cattleyas" (*R.H.S. Conf. Genetics*, pp. 222-241) I did not include a hybrid of C. velutina, though one might have been included but for a little sceptism on my part. Some time previously the Marquis de Wavrin, Chateau de Ronsele, near Somerghem, Belgium, sent a flower of a Cattleya which was said to have been introduced by Messrs. Sander and Sons. It was obviously a hybrid between C. velutina and some species of the labiata group, and I searched the records of habitat of the former but could find no evidence of such a combination, and therefore replied that I thought it must be of artificial origin. This year another flower has been sent by the Marquis, through Messrs. Sander and Sons, and the latter wrote from Bruges as follows:—"The plant was sent home by our Mr. Forget some years ago. The habit of the plant is somewhat like a very dwarf C. velutina, and the colour of the bulbs and leaves as dark as C. Schilleriana." I then asked for information as to the district the plant came from, and whether any other species was found in the importation. Messrs. Sander replied:—"Our Mr. Forget is here at Bruges at present, and he says that the plant in question comes from the Lælia tenebrosa district, where Cattleya Warneri, C. Schilleriana and C. velutina were found." This information was both new and interesting, for the *Flora Brasiliensis* only records C. velutina from the province of Rio de Janeiro, while the others mentioned are not known from there. Now we have evidence that C. velutina also occurs in Bahia, and the point helps to confirm a remark previously made that our knowledge of the geographical distribution of the Brazilian Cattleyas is still very imperfect. It is now evident that C. Warneri was the second parent of the plant in question, for the flower sent is fairly intermediate between the two. There is an unmistakeable resemblance to C. velutina, but the flower is enlarged to a diameter of 5¼ inches from tip to tip of the petals. The latter are also a third broader, slightly undulate, not narrowed at the base in the same way, and distinctly suffused with lilac-rose. The lip may be described as subentire or obscurely three-lobed, and is elongated to 2½ inches long, by 1¼ broad. The front lobe is somewhat undulate, and light rose, veined with purple in front.

while the throat is light yellow, with a deeper yellow blotch on the disc in front of the tube. The face of the tube is slightly velvety, and there are some dull crimson veins towards the base. The column is about an inch long. It is a handsome thing, and a very interesting addition to the group.

CATTLEYA × FRANKEANA.

A flower of another very interesting Cattleya has been sent to Kew by M. Theodor Franke, Gross-Ottersleben, near Magdeburg, Germany, with the remark that it was a natural hybrid which was found in an importation of C. velutina. Though totally different from the preceding, there is the same unmistakeable resemblance to C. velutina, which latter is one of the most distinct of the Brazilian species. The habitat was not stated, and but for the information just given its origin would have been as mysterious as that of C. × bahiensis, for no resemblance to the species of the Rio district could be traced. I believe that C. Schilleriana was the second parent. The flower has an expanse of 4½ inches across the petals, these being ¾ inch broad, somewhat undulate, and not narrowed at the base as in C. velutina. Their colour, and that of the sepals, is deep buff, with a few purple spots. The lip is three-lobed, with the front lobe 1½ inches broad, lilac in colour, with radiating crimson veins in front; the side lobes twice as broad as in C. velutina, truncate or obtusely rounded, and the colour lilac; while the disc bears a yellow blotch on the isthmus, in front of the column. The resemblance to C. velutina is very obvious, both in shape and colour, but the contour of the petals and lip are much modified in the direction of C. Schilleriana, while the markings in front of the lip show the same influence. I cannot see any other combination that would produce such a hybrid. It is interesting to find two distinct hybrids from C. velutina, and importations of the species will now be watched more closely in consequence.

R. A. ROLFE.

EPIDENDRUMS SUITABLE FOR TRAINING UPON PILLARS AND WALLS.—Many houses possess a wall, corridor, or pillar that would prove an ideal position for such Orchids as E. radicans, E. evectum, with its hybrid O'Brienianum; also E. xanthinum and Wallisi and the new Boundii. They are nearly always in bloom, as one flower decays another takes its place, and so they continue for many months. For buttonholes they prove very useful, and if allowed to remain on the plants the brilliance of E. radicans, or the beautiful yellow of E. xanthinum always adds a little colour, and forms a pleasing contrast among foliage plants or Orchids not in flower. Any that have top growths emitting new roots may be taken off, and four or five may be made up into a neat specimen.—T. ANSTISS, in *Journal of Horticulture.*

ONCIDIUM × STANLEYI.

THIS handsome Oncidium appeared in the establishment of Messrs. Stanley & Co., Chase Side, Southgate, and received an Award of Merit from the R.H.S. on August 28th, 1906, when a description appeared in these pages (*O.R.* xiv. p. 286). Through the kindness of the Editor of the *Journal of Horticulture* we are now able to give an illustration (fig. 32). The plant appeared in an importation of Oncidium Forbesii, O. prætextum, and O. curtum, and is supposed to be a natural hybrid between the last-named and O. Marshallianum, which grows in the same district. The plant bore two fine panicles and an aggregate of about 120 flowers. The flowers are fairly intermediate in character, though most like O. Marshallianum in colour,

Fig 32. ONCIDIUM × STANLEYI.

while the crests are nearer those of O. curtum. Their expanse reaches over $1\frac{3}{4}$ inches across the petals. The dorsal sepal is broadly elliptical and obtuse, bright yellow in colour, with three or four light brown bands, and the lateral pair are rather narrower, and diverge from the united basal portion. The petals are broadly unguiculate, nearly orbicular, retuse, about $\frac{3}{4}$ inch broad, and bright yellow, with a large elliptical light brown blotch and a few small spots between it and the margin. The lip is broadly unguiculate, nearly an inch long, with the side lobes very small,

and the front lobe broadly dilated and bilobed at the apex. The crest is two-lobed in front, with an additional ear-shaped row of tubercles near the base of the side lobes. The colour of the lip is bright yellow with the crest and tubercles light brown. The column wings are very short, entire, and light yellow, closely dotted with brown. It is certainly a very handsome thing, and distinct from anything we can find. By an accident the original figure (*Journ. Hort.* 1906, ii. p. 267) was inserted upside down.

It may be added that there are several very imperfectly known Brazilian Oncidiums which are believed to be of natural hybrid origin, and it would be interesting to have the question fully cleared up. There are difficulties in finding out exactly what species grow intermixed, and perhaps in raising them artificially, though I do not know if the experiment has been tried. It should not now be beyond the powers of some of our expert hybridists.

R. A. ROLFE.

OBITUARY.

RICHARD ISAAC MEASURES.—It is with much regret that we have to announce the death of Mr. R. I. Measures, which took place at his residence, Cambridge Lodge, Flodden Road, Camberwell, on August 8th. The deceased, who was 74 years of age, and has been in failing health for some time, as the result of a paralytic attack, has been an enthusiastic Orchidist for many years, just how long we do not remember, but in September, 1887, was published a List of Cypripediums in the collection of Mr. R. I. Measures, Cambridge Lodge, Camberwell, which was followed by a second edition in July, 1889, and a List of Masdevallia and allied genera in June, 1890. Both groups were favourites with Mr. Measures, but other groups were well represented in his collection, which was quite a representative one, occupying about eighteen houses, as may be seen by an account which appeared in our second volume (pp. 102-106). The collection was frequently represented at the meetings of the Royal Horticultural Society, one of our earliest recollections of it being in this connection, when the handsome Odontoglossum platychilum flowered there for the first time, in March, 1892. It was quite new, and nothing was known about it except that it had been purchased by Mr. Measures out of an odd lot when the Downside collection was sold. Only quite recently has its origin and history become fully known (*O.R.* xiv. p. 61). The Siamese Cypripedium exul also flowered here for the first time in Europe, in April, 1892, receiving an Award of Merit from the R.H.S. A good deal of attention has been paid to hybridisation, and among the hybrids which occur to us as raised here are Cypripedium × Apollo (vexillarium × Stonei), C. × Indra (callosum × villosum), C. × Nandii (callosum × Tautzianum), C. × Wottoni (callosum × bellatulum), and C. × Zeus

(callosum × ciliare). Here, too, appeared the unique albino of C. venustum, known as variety Measuresianum, which received an Award of Merit from the R.H.S. in December, 1893 (*O.R.* ii. p. 11). A hybrid which will serve to perpetuate Mr. Measures' name is Masdevallia × Measuresiana, raised by Messrs. Sander from M. tovarensis and M. amabilis, and figured in *Reichenbachia* (ser. 2, ii. p. 63, t. 76, fig. 3). The deceased was a brother of Mr. R. H. Measures, of The Woodlands, Streatham, whose collection was so recently dispersed. We believe that the present collection is also to be disposed of very soon, and that Mr. J. Smith, who has managed it so well for the last five years, will then be seeking another engagement. A note on the collection, by Mr. J. M. Black, appeared in our last issue (pp. 239-240).

ORCHIDS AT KEW.

MANY interesting and showy Orchids are flowering in the Kew collection, and foremost among them must be mentioned the large plant of Grammatophyllum speciosum over the tank in the adjacent Water Lily house, which is now producing three fine scapes. At the moment of writing several of the lower flowers are already expanded, and the plant is likely to be a centre of interest during at least the first three weeks in September. In one of the Warm houses a plant of the remarkable Cycnoches Egertonianum is bearing two female flowers, these being green in colour, while the other sex, which may appear later, is purple and wholly different in structure. Epidendrum × Berkeleyi, bearing two heads of flowers, is an acquisition, as brilliant in colour as the seed parent, E. × O'Brienianum, while greatly dwarfed by the influence of E. Stamfordianum, the other parent. Near by the graceful Neobenthamia gracilis carries three heads of flowers, and Bulbophyllum saltatorium, nearly allied to B. barbigerum but smaller, nine racemes. There are also flowers of Cœlogyne speciosa, Epidendrum Parkinsonianum, Catasetum Trulla and C. Russellianum, Nephelaphyllum pulchrum, Dendrobium superbiens, and D. Dearei, the latter having been in flower for many weeks.

The Cattleya house is gay with Cattleyas and allies, Miltonias and Oncidiums, the latter including O. curtum, prætextum, Wentworthianum, varicosum, oblongatum, bracteatum, ornithorhynchum, and some others. The Brazilian Miltonias are invariably shewy in late summer and autumn, and the earliest now include M. spectabilis Moreliana, M. × castanea with eight racemes, and M. × Cogniauxiæ with its variety bicolor, the two last as different in colour as are M. spectabilis and its var. Moreliana, from which the two former are believed to be in part derived. M. Roezlii is also in bloom. Cattleyas include fine examples of C. Grossii with six racemes, C. velutina with three, C. Warscewiczii with four, with examples of C.

Leopoldi, several Lælia Dayana, the brilliant little L. monophylla, Lælio-cattleya elegans with three racemes, L.-c. Adolphus, L.-c. Mandarin, and several other hybrids, with Epidendrums, Sobralias and others.

In the Cool house Stenoglottis longifolia and its variety alba are flowering freely, and the spikes remind one of some Orchis. The singular little Binotia brasiliensis (formerly referred to Cochlioda) is bearing two racemes of its greenish-white flowers. There are also examples of Calanthe japonica, C. × Dominii, Masdevallia Chestertoni and many others, while good examples of Odontoglossum aspidorrhinum and O. purum are among the rare species of that genus now in flower.

In the next house a plant of Vanda Sanderiana is throwing up six flower spikes, while Phalænopsis rosea, Aerides Lawrenceæ var. Sanderianum, Warscewiczella velata and W. cochlearis are very attractive. A flower of Paphiopedilum Fairrieanum is already out, and several plants are showing well for flower. The species continues to grow freely, enabling one to understand the earlier records, which a few years ago were regarded almost with incredulity. A good many others are in flower, of which P. × Maynardii with seven blooms and the handsome O. glaucophyllum may be mentioned.

PHAIUS AMBOINENSIS.

AT at the R.H.S. meeting, held on July 23rd last, a Phaius was exhibited by Messrs. Sander and Sons, St. Albans, under the name of Phaius maculatus albus, which was said to have been received from Java under that name. It was comparable with P. flavus, Blume, in habit, and in the general shape of the flowers, but the colour was white with some veining on the lip. It appears to be identical with P. Zollingeri, Rchb. f., a species described and figured in 1856 (*Xen. Orch.* i. p. 201, t. 76, fig. 2), from specimens collected by Zollinger, among bamboos, at Idjeng, Java. It is described as being much like P. maculatus, Lindl., but the flowers white, with some yellow on the lip. The figure is very rude, but there is a type specimen in Lindley's Herbarium, with a single expanded flower, rather smaller than those shown by Messrs. Sander, but apparently representing the same species. J. J. Smith (*Orch. Jav.* p. 198) regards P. Zollingeri as synonymous with P. amboinensis, Blume, a species described in 1852 (*Mus. Bot.* ii. p. 180). This was based primarily upon Bletia amboinensis, Herb. Zipp., and secondarily upon Angræcum terrestre alteram, *Rumph, Herb. Amb.* vi. p. 113, t. 50, fig. 3, which appeared as long ago as 1750. The two appear to be distinct, and indeed Blume originally pointed out differences between them, so that we must limit the species to the plant of Zippelius, which is said to have a sulphur-coloured lip, with the other parts white. Smith at first followed Blume in including this old figure, but afterward,

Orch. Ambon, p. 21) he excluded it as belonging to P. gratus, Blume. But he then added another old figure as representing P. amboinensis, namely, *Rumph. Herb. Amb.* vi. p. 113, t. 52, fig. 1. This, however, is very doubtful, for this particular figure is the type of P. Rumphii, Blume, which has since been reduced, and I believe rightly, to P. callosus, Lindl. Again, P. gratus, Blume, was based upon an old description of Rumphius, so that these points remain to be cleared up. The species of the P. flavus group are very imperfectly known at present. Smith unites the Indian P. maculatus, as well as three others described by Blume and two by Reichenbach, with P. flavus, but some at least of them appear to be distinct. P. amboinensis, as now understood, is a native of Amboina, Java, and Celebes, and may be easily distinguished from P. flavus by the colour of the flowers. There are three white hairy keels on the lip, the reddish purple lines extending to the side lobes, where they are lighter in colour and somewhat broken up into dots. It would be interesting if the other species could be introduced.

R. A. ROLFE.

ORCHIDS IN SEASON.

A TWO-flowered inflorescence of the original and very handsome Cattleya × Chamberlainiana is sent from the collection of the Right Hon. J. Chamberlain, M.P., by Mr. Mackay, who remarks that the plant has been for seventeen years in the Highbury collection. He adds:—"I believe there were three plants raised by Messrs. Veitch, and it would be interesting to know if the other two are still alive." The parents were Cattleya Leopoldi and C. Dowiana, and the hybrid first flowered in 1881.

A pretty little hybrid, raised from Cattleya Aclandiæ × Lælia tenebrosa, is sent from the collection of R. G. Thwaites, Esq., Streatham, by Mr. Black. It is a form of Lælio-cattleya Remula, originally raised by Messrs. Veitch.

Several interesting flowers are sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon, including the handsome Miltonia spectabilis Moreliana and M. Regnellii, the brilliant Disa grandiflora, a fine Vanda cœrulea, Oncidium dasytyle, Epidendrum fragrans E. prismatocarpum, Brassavola nodosa, Masdevallia demissa and Cœlogyne carrugata.

Three interesting Orchids are sent from the collection of W. Thompson, Esq., Walton Grange, Stone, by Mr. Stevens. A flower of Odontoglossum × Crawshayanum, taken from a spike of twelve, is extremely beautiful. The sepals and petals are bright yellow blotched with brown, and most resemble O. Hallii in shape, while the lip is nearer O. Harryanum, being large and flat, with many brown dots on the basal half, and a very spiny crest. The ground colour is pure white at first, but afterwards changes to light yellow. The others are inflorescences of O. constrictum and Trichopilia fragrans.

GRAMMATOPHYLLUM SPECIOSUM.

THE large specimen of Grammatophyllum speciosum which has for so long occupied a position over the water-lily tank at Kew, next to the Orchid Houses, has at last produced three very fine spikes. It made an unseasonable attempt to flower in November, 1901, when two spikes appeared (*O.R.* ix. p. 375), but they never fully developed, perhaps because so late in the year. It will be remembered that a very fine spike appeared in the collection of Sir Trevor Lawrence, Bart., at Burford, in August, 1897, when the history of the species in this country was given in detail (*O.R.* v. pp. 268-270). The Burford spike measured over 7 feet long, and bore about 70 flowers; those at Kew promise to reach similar dimensions when fully developed, but at present only a few of the flowers are expanded, and these mostly the basal ones, which seem to be invariably imperfect. Further details may be given later. Some of those who cannot see the plant itsel may be able to turn up the *Botanical Magazine* figure (t. 5157), prepared from a plant which flowered in the collection of W. G. Farmer, Esq., of Nonsuch Park, Ewell, in October, 1859, when Sir William Hooker remarked: "From its vigorous vegetation, and the remarkable size of the flowers, it richly merits the title of the Queen of Orchidaceous Plants." It certainly ranks as the mammoth of the family.

R. A. R.

CIRRHOPETALUM BIFLORUM.

A VERY interesting Javan Orchid has just flowered with Messrs. J. W. Moore, Rawdon, Leeds, apparently for the first time in Europe. It was obtained by them from Java, and on comparison proves to be Cirrhopetalum biflorum, J. J. Smith (*Ic. Bogor.* ii. p. 104, t. 120, fig. B.). It was originally described as long as 1855, under the name of Bulbophyllum biflorum (Teijsm. et. Binn. in *Nederl. Kruidk. Archief*, iii. p. 397), from specimens collected on Mt. Salak, but like many other Javan Orchids was for a long time almost lost sight of. I have not yet seen the plant, but the scape, as in the original, was two-flowered. The lateral sepals are elongated and very acuminate, about 2½ inches long, with seven purple stripes at the base, and the remainder light green with very minute and obscure reddish dots. The dorsal sepal is lanceolate, aristate, nearly a third as long as the lateral, and greenish with five purple stripes. The petals are broad, with three apical teeth, greenish with three purple stripes at the base and many pellucid dots above. The lip is much recurved, acute, mottled with brown, and somewhat darker at the broader base. It is interesting to find the species in cultivation.

R. A. R.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during September, on the 3rd and 17th, when the Orchid Committee will meet at the usual hour, twelve o'clock noon. On the former date a lecture will be given by Mr. F. W. Moore, V.M.H., at 3 p.m., on "Lesser known Orchids," accompanied by lantern slides. The following meeting will be held on October 1st.

The two next meetings of the Manchester and North of England Orchid Society are fixed for September 19th and October 3rd, at the Coal Exchange, Manchester. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 o'clock p.m.

Orchidists will learn with regret that the famous collection of Orchids formed by R. H. Measures, Esq., The Woodlands, Streatham, has been dispersed, having been sold by auction by Messrs. Protheroe & Morris at a six days' sale, commencing on July 10th last. It is said that Mr. Measures has sold all his Streatham property. The collection of Cypripediums and of Lælio-cattleya elegans, we believe, formed important features. Of late years Mr. Measures has not appeared as an exhibitor, and the collection has been less known than it otherwise might have been.

The following notes of Orchids exhibited at the R.H.S. Scientific Committee are taken from recent reports :—

At the meeting held on June 11th, Mr. C. T. Druery exhibited Aceras anthropophora, Orchis Morio, O. maculata and Gymnadenia conopsea, collected near Harefield, Middlesex.

MALFORMATION OF MILTONIA VEXILLARIA.—Baron Schröder sent a curious spike of this Orchid which bore four apparently double flowers. The spike was produced on a small, and not very vigorous piece, taken from a larger plant which had previously borne only single flowers of the ordinary type. Mr. Worsdell took the flowers to examine further.

At the meeting held on June 25th, Mr. Worsdell reported on the double Miltonia vexillaria shown at the last meeting, that it was a good case of true doubling, in which the column was split up, and the stamens and carpels had become petaloid so as to form three or four extra whorls of petals (labella on one side of the flower, ordinary petals on the other side), while the outer whorls of the flower were quite normal.

At the meeting held on July 23rd, Mr. Bowles exhibited a large spike of Lueddemannia Pescatorei, which had been sent by Mr. F. W. Moore from the Royal Botanic Gardens, Glasnevin.

ORCHID PORTRAITS.

ARACHNANTHE LOWII.—*Journ. Hort.* 1907, ii. p. 147, with fig.

BRASSOCATTLEYA MARY.—*Journ. Hort.*, 1907, ii. p. 99, with fig.

CATTLEYA WARSCEWICZII.—*Gard. Mag.* 1907, p. 595, with fig.

CYPRIPEDIUM × DORA CRAWSHAW. —*Journ. Hort.*, 1907, ii. p. 123, with fig.

DENDROBIUM REGIUM, Prain.—*Gard. Chron.* 1907, ii. p. 122, fig. 46.

DISA LACERA.—*Journ. Hort.* 1907, ii. p. 195, with fig.

DISA × VEITCHII.—*Journ. Hort.* 1907, ii. p. 125, with fig.

GRAMMATOPHYLLUM SPECIOSUM.—*Gard. Chron.* 1907, ii. pp. 169, 170, fig. 69, 70.

LÆLIA JONGHEANA, KROMER'S FORM.—*Journ. Hort.*, 1907, ii. p. 171, with fig.

NEOBENTHAMIA GRACILIS.—*Gard. Chron.* 1907, ii. p. 174, fig. 72.

ODONTOGLOSSUM CRISPUM VAR. EMINATUM.—*Moll. Gart. Zeit.*, 1907, p. 293, with fig. VAR. JEAN LINDEN.—*Moll. Gart. Zeit.*, 1907, p. 293, with fig. VAR. NOBILIUS.—*Journ. Hort.*, 1907, ii. p. 123, with fig. VAR. REINE D'ANGLETERRE.—*Moll. Gart. Zeit.*, 1907, p. 292, with fig. VAR. ROI D'ANGLETERRE.—*Moll. Gart. Zeit.*, 1907, p. 292, with fig. VAR. TRIOMPHE DE MOORTEBEEK.—*Moll. Gart. Zeit.*, 1907, p. 293, with fig. VAR. XANTHOTES WHITE'S VAR.—*Gard. Mag.*, 1907, p. 569, with fig.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work*].

De B.C. The rhizome was cut through twice, isolating both the mature bulbs and the young growth, and all three grew. The matter at page 227 was not quite clearly stated for it was intended to imply that both bulbs were separated from the growth.

H H. Brassavola nodosa, Epidendrum fragrans, and E. species uncertain.

J.F.S. Odontoglossum crispum var. platychilum.

J.W.P. Sarcochilus unguiculatus.

A. J. van. E. Maxillaria picta.

W.J.D. Odontoglossum Lindleyanum, one of the parents of O. × Coradinei.

We have received from the Agricultural and Horticultural Association, 92, Long Acre, W.C., two interesting little booklets, on "Bulbs," by S. Arnott, F.R.H.S., and "Weather," by the Hon. H. A. Stanhope. The authors are experts, and the latter subject is of interest to all Orchidists. Both are well illustrated and are published at one penny each.

ERRATUM.

Odontoglossum crispum "Boltoni" given at page 227, line 5, of our last issue should be corrected to O. c. Poultoni.

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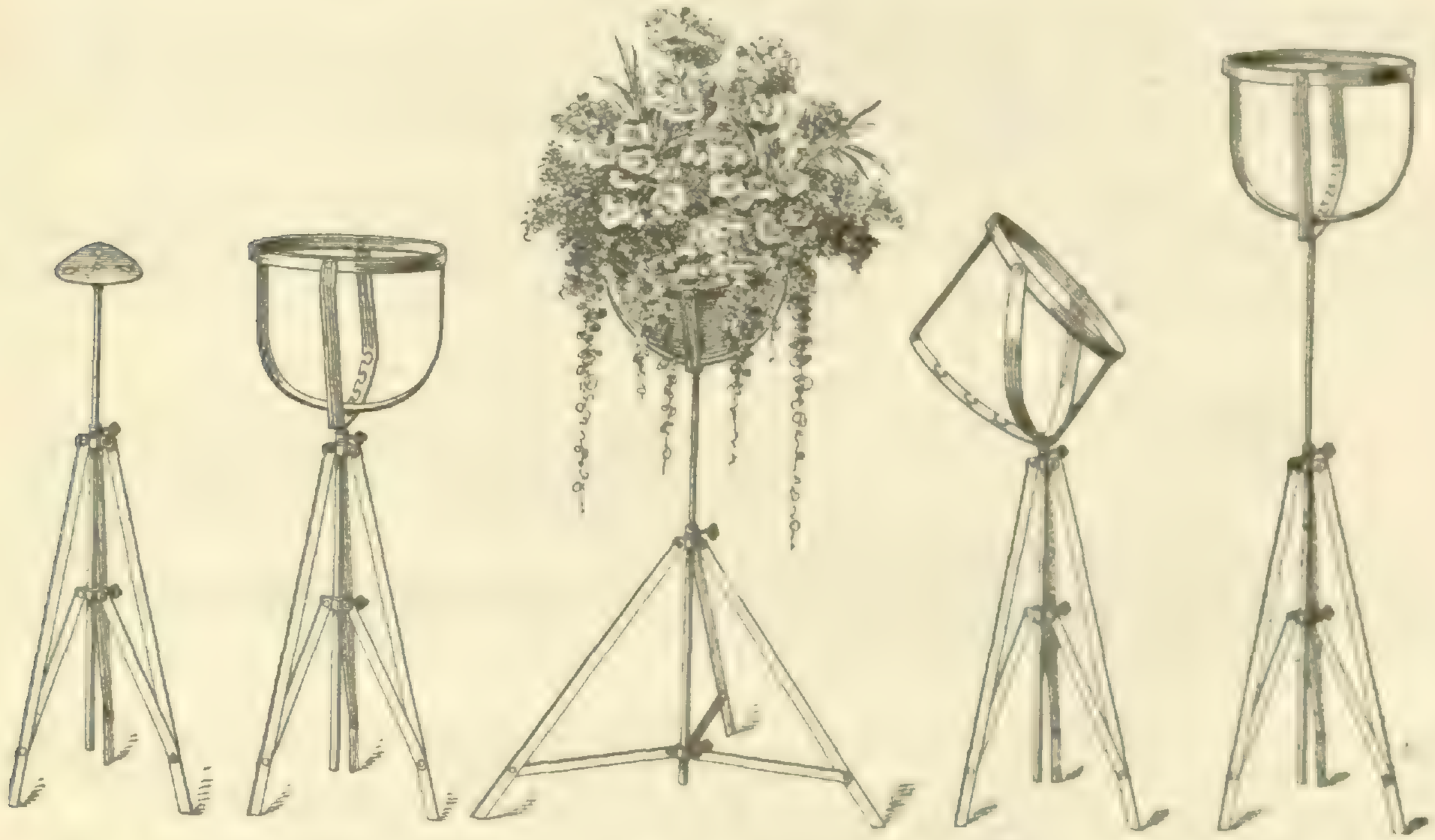

Fig. 1. **Fig. 2.** **Fig. 3.** **Fig. 4.** **Fig. 5.**

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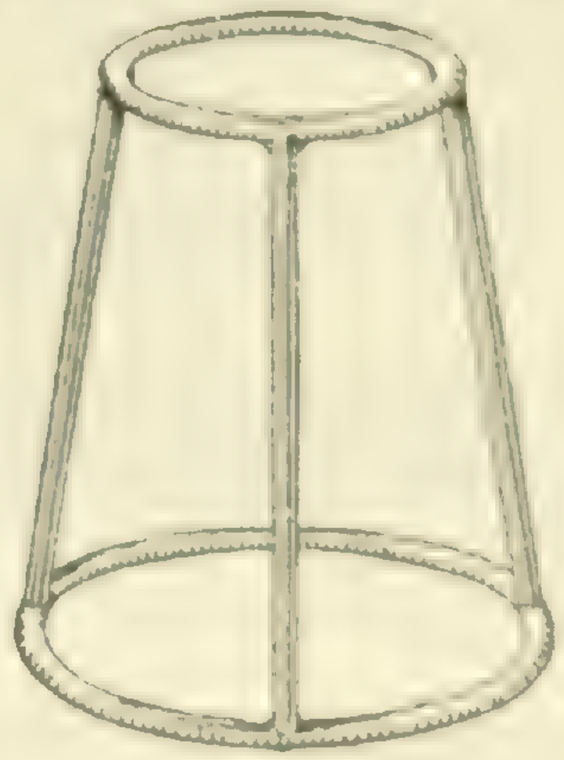

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THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *OCTOBER*, 1907. [No. 178.

ORCHIDS AT ST. ALBANS.

By J. M. BLACK.

TOWARDS the end of August I had the very great pleasure of spending a day in the Orchid nurseries of Messrs. Sander and Sons, St. Albans, and having made the intimate acquaintance of this establishment as an employee some thirteen or fourteen years ago, I am in a good position to judge of the great change which has taken place here during recent years. One realizes after a visit to St. Albans the great revolution that has taken place in Orchids during the past decade. Here one sees houseful after houseful of Cattleya, Lælia, and Cypripedium hybrids. Some of the large houses that run from the bottom corridor to the top house, and which are something like 300 feet long, with wide centre staging, are now full of Lælio-cattleyas of flowering size, and raising is carried on as keenly as ever. Primary hybrids flower, and secondary hybrids with new combinations suggest themselves, and I got the impression that already two-thirds of this extensive place is now given up to plants of home-breeding. Mr. Walter Gott, who has been in charge of the hybridising department for the past nine or ten years, and to whose cleverness with seedlings such magnificent results are chiefly due, deserves all congratulations. As time has gone on, and the seedlings have encroached on the room occupied by other plants, many of the houses were discovered to be not quite suitable for the infant plants, so that a large part of the nursery has been reconstructed, and seventeen new houses are at present being built on the site occupied by the gigantic top house, which is being demolished. Seven of these houses were finished when I was there, and were being quickly filled up as the plantlets (from other houses) got potted on.

The question of housing Orchids is not one that should be treated lightly, and it is a much to be regretted fact that many a private collection (or nursery, for that matter), that has taken years and a mint of money to form, has dwindled on account of the houses being badly suited for their work. If I were a gentleman about to form a collection of Orchids I should begin by getting the advice of men of practical and successful experience and build accordingly—and not be niggardly about the outlay. Although

a good grower with bad houses may be half a success, he can never do himself justice. Orchids give endless pleasure to all concerned when they are grown well, and endless vexation when they are not; but there is no reason why the latter should ever be the case, for (with a few notorious exceptions) the fault does not lie with the Orchid, but with some part of its treatment. Messrs. Sander have never been slow to acknowledge faulty constructions in their establishment, and have never hesitated to spend money freely on altering or rebuilding.

A new seedling house, the *incubator* for Lælio-cattleyas, is a model of its kind, and has some features new to me, notably perforated zinc staging on which to stand the little pots. Zinc is a metal peculiarly distasteful to some insects, and keeps singularly clean, not oxidising with the moisture. Slugs never venture on it, and it should be excellent for Odontoglossum seedling houses. The centre staging in this house is entirely cased in, but is portable in short sections, permitting of any part being cleaned and replaced without the rest being disturbed. The piers supporting the stages are standing in miniature cement tanks, so that the plants are secured from cockroaches, &c. There are pipes and valves in plenty, the whole being constructed for an object regardless of the cost.

In the first Orchid houses under notice, containing a wide range of genera and species which require somewhat the same temperature, a nice lot of Habenaria Susannæ were flourishing extremely at the top and hotter end. Batches of Cypripedium Gratrixianum, which is proving itself a very good grower, and C. annamense were noted here. Among a lot of Bulbophyllums was an unflowered species having beautiful leaves. Interesting also were a number of plants in flower of Phaius amboinensis, much like a white P. maculatus. A large number of Cypripedium concolor Sanderæ were throwing up their scapes. This is a particularly floriferous variety, bearing more than the usual number of flowers on the scape. Cœlogyne Lawrenceana, one of about twenty new species recently introduced from Annam, is represented by a good number of plants. The finest known specimens of Arachnanthe Lowii calls also for mention. This plant has carried as many as twenty-four spikes at once. A remarkable specimen of Nanodes Medusæ was pointed out at the top of the Odontoglossum house. It seems that to grow this plant successfully it requires treating almost as an aquatic, always in a state of saturation. A fine lot of Odontoglossum Uroskinneri were flourishing on the centre stage of this house one specimen being two feet in diameter. This house, though a perfectly cool Odontoglossum house, seems to suit it admirably.

We now come to the flowering-size Lælio-cattleyas, which are contained in the large houses. There was an excellent show of L.-c. bletchleyensis in flower, and a very remarkable strain it was, the blooms being large and full,

and supporting themselves well, and some intensely dark coloured. A good number of L.-c. exoniensis, L.-c. Aphrodite, L.-c. Remula, L.-c. Henry Greenwood, Cattleya × Davisii (C. velutina × C. × Hardyana), which varied enormously, and many others were flowering, and there was also an excellent show of sheaths, promising a good succession. Many choice species are also accommodated with good positions in this house. Mr. Gott was also busy here selecting good hybrids as they flower for seed-bearing, and a large number of podded plants were arranged along the top of the centre stages, where they have a good position to ripen well.

We now come to a series of houses opening out of a 340 feet long corridor, and at right angles to the last houses. The first of these contained a number of albino Cattleya species, and some of the very choicest things. In flower was a gorgeous Lælio-cattleya Ingramii splendidissima.

Then follow five houses containing Lælio-cattleyas up to three years old, and all were looking in perfect health. Two houses of Cymbidiums, mostly species, follow, and then came a house containing Zygopetalums, Zygocolax, Epidendrums, Phaius, Zygonisia, Cymbidium hybrids, &c. In flower in this house was Cynorchis purpurascens. Some interesting plants were in the house following: batches of Cymbidium insigne and C. erythrostylum, the true plant of C. Sanderæ carrying a pod, Sobralia species in variety, &c. Some good species of Eriopsis rutidobulbon were suspended in this house. The next two houses were full of Cypripedium hybrids, one houseful flowered, and the other unflowered. A most excellent type of Cypripedium Godefroyæ leuchochilum was noted in the next house. Passing through this house we enter what is known here as the "new" seedling house, which I have already mentioned. The cases were full of seedlings, just pricked off during this season, or only germinating on the seed pans. All along one side, neatly arranged on the side stage, were plants singly in thimble pots, standing securely on the smooth surface of the perforated zinc. The other side was occupied with choice Cypripediums in excellent condition, and a good many were already in flower. There was here comprised all that is best in the way of Cypripediums. A plant of the new Cœlogyne Mooreana was suspended in this house.

Going up to what is called the old range of seedling houses, we found the first full of choice Cypripedium insigne and other Cypripediums which like similar treatment. A most curious cross was shown me by Mr. Gott in one of these houses, namely, Chondrorhyncha Chestertoni × Zygopetalum Mackayi. There were quite a little lot of plants, and they appear, as far as one can judge them at present, to be mostly intermediate. It will be instructive to see how far the Zygopetalum will be able to assert its influence in this case. Some of the seedlings ought to flower next year. In one of these houses the Cypripedium seed is sown on plants. There are three

other houses in this range full of Lælio-cattleyas, while one has quantities of Phalænopsis amabilis Rimestadiana and P. Lueddemanniana, and also a fine lot of Pachystoma Thompsonianum. Here were also a thriving lot of Thunia hybrids, and a further lot of about three thousand Cypripedium seedlings. The last house visited is called "the hospital," for here the cripples of the collection are nursed back to convalescence—or else disappear.

One misses the big lots of imported plants that used to mostly fill this establishment, but importations now mostly find their way to the establishment of Messrs. Sander at Bruges. At Bruges also are grown most of the Odontoglossums, where I am told they are now being raised from seed with entire success.

Messrs. Sander are also interested in new plants, and at their St. Albans establishment a considerable amount of glass is devoted to their cultivation, but they do not come within the sphere of this work.

CYPRIPEDIUM CULTURE.

Mr. Gott was kind enough to give me, during my recent visit there, a brief outline of what he considers to be the requirements of Cypripediums. Mr. Gott has raised and grows a good many thousands—and he grows and propagates them well, so that his ideas deserve every consideration.

To grow a collection of Cypripediums successfully Mr. Gott says that it is necessary to have two houses, one house for the green-leaved species, such as insigne, villosum, Boxallii, Spicerianum, &c., and the hybrids derived from these, such as nitens, Sallieri, Leeanum, Lathamianum, Calypso, &c., and one for the variegated or mottled-leaved kinds.

His experience has taught him that the former revel in abundance of night moisture, and he has never known an instance where they have damped off through having too much moisture on the leaves. In districts where there are night mists (not smoky), and where this moisture is thus afforded naturally, these kinds always do well. An all-the-year-round temperature of 50°—55° by night and 60°—65° by day should be aimed at.

The variegated or mottled-leaved kinds require about ten degrees more heat than the green ones, and with them should be grown some green-leaved exceptions, such as Stonei, Rothschildianum, Sanderianum, and also the Selenipediums. These mottled-leaved kinds require far less moisture in the atmosphere, much more light, and a less rich and close potting mixture, *i.e.* less loam than the former.

Mr. Gott particularly deprecates the Turkish bath atmosphere which one too often finds in Cypripedium houses in summer, as it is both bad for raising seed and growing plants, and simply exhausting them by forcing: and he would point out that they grow very little during very hot weather.

NATURAL HYBRID CATTLEYAS.

A very interesting correspondence with M. Forget respecting Cattleya × bahiensis is related on another page, and I have now to thank him, and Messrs. Sander & Sons, St. Albans, for some very important information respecting the distribution of the Brazilian Cattleyas, in collecting which he has had so much experience. In my paper on "Natural Hybrid Cattleyas" (*R.H.S. Conf. Genetics*, pp. 222-241) I remarked:—"Our knowledge of the geographical distribution of some of the species is still very imperfect," and also "Horticultural collectors might make some useful contributions to this interesting question." Finding that M. Forget was in England, I sent him a copy of my paper, requesting the favour of a candid criticism of its contents, so far as his experience permitted, and any information as to the species which he knew to grow intermixed. His reply is extremely interesting, and contains numerous important facts, and it will be best to present it as nearly as possible in its original form. It follows the sequence of my paper, which it will be remembered was a chronological one. The pages are given in brackets for convenience of reference.

Lælio-cattleya elegans (p. 224).—Lælia purpurata grows intermixed with Cattleya intermedia and C. Leopoldi in the Island of Santa Catherina. But it also grows on the coast of the mainland, from the port of Santos, where it grows with Cattleya guttata, C. intermedia (amethystina), and C. Forbesii right along the coast to the State of Rio Grande do Sul.

L.-c. amanda (p. 224).—Lælia Boothiana is found at the Gavea, especially at Sapiatoba and Cabo Frio, near Rio de Janeiro, where it grows in touch with Cattleya Forbesii, C. guttata, and C. intermedia. Lælia crispa is a cool grower and cannot have any contact with the above plants.

Cattleya × Hardyana (p. 225) comes from the State of Antioquia, particularly from Dabeiba and Ituango, the district for C. Dowiana aurea. C. gigas Sanderiana is quite distant from that region, and is found in the State of Cundinamarca, just below the Odontoglossum crispum district. It is in touch with C. Trianæ bogotensis, and two years ago I found a hybrid between the two, but I do not know if it still lives.

C. × resplendens (p. 226) cannot be from C. granulosa, which is from the State of Pernambuco, but is possibly from C. granulosa Schofieldiana and C. Schilleriana, which are found together in the State of Espirito Santo.

C. × Lucieniana (p. 226) also cannot be from C. granulosa, but is perhaps from C. guttata and C. Harrisoniana violacea or C. Forbesii. These species are all very warm growers, occurring in the low-lands between the sea and the mountains in the Province of Rio. C. Loddigesii of the interior of Sao Paulo and Minas Geraes is a cold grower.

C. × SCITA (p. 226) might be between C. intermedia and C. guttata or C. Forbesii, which are found together right north of Rio, then along the coast of Rio, Sao Paulo, Parana and Santa Catherina.

LÆLIO-CATTLEYA PORPHYRITIS (p. 226).—Lælia Dayana, L. pumila, L. Perrinii, L. crispa, Cattleya Dormaniana, C. bicolor, and C. velutina are all in touch, and from Novo Friburgo I have collected all at the same time. They are cool temperate growers, that is to say, that immediately the sun sets one feels quite chilly in this part of the Organ Mountains.

CATTLEYA × MEASURESII (p. 226) cannot be a natural hybrid of C. Aclandiæ, which grows absolutely alone on the Mango trees on an island quite south of the State of Bahia. C. amethystoglossa and C. Schilleriana might meet.

LÆLIA × LILACINA (p. 227).—As said above, L. crispa and L. Perrini grow in touch.

CATTLEYA × SORORIA (p. 227).—C. guttata can have nothing to do with the origin of this plant. C. bicolor, C. Walkeriana, C. Loddigesii Lælia præstans, and L. Jongheana grow in touch in the State of Minas Geraes, and all are cool growers. The two Lælias are both from the district of Itabira do Campo.

BRASSOCATTLEYA LINDLEYANA (p. 227).—I once saw one plant in the State of Santa Catherina, and the parentage given is certainly correct.

LÆLIA × GOULDIANA (p. 227).—In 1887 or 1888 the late Carlos Theime, of Rio de Janeiro, found L. Gouldiana in quantity when collecting for the firm of Siebrecht and Wadley, of New York, and five years ago he received a very pressing letter to go and collect it again. According to that some special district may be hiding this fine plant.

LÆLIO-CATTLEYA GOTTOIANA (p. 229) was found in the State of Espirito Santo, intermixed with Cattleya Warneri and Lælia tenebrosa.

L.-C. ALBANENSIS (p. 230) was found in the south of the State of Bahia, with Cattleya Warneri and the common L. grandis. L.-c. Stchegoleffiana can have nothing to do with Cattleya labiata. It will be from C. Warneri and either Lælia tenebrosa or L. grandis.

CATTLEYA × VICTORIA-REGINA (p. 230) appeared in the first lot of C. Leopoldi pernambucensis, from Bonconcelho, where the latter is in touch with C. labiata. The year after I had a terrible time over it, but could not get one.

LÆLIO-CATTLEYA PITTIANA (p. 231) is from the centre of Bahia, and was found when collecting Cattleya amethystoglossa in a district where it grows intermixed with Lælia grandis.

CATTLEYA × VENOSA (p. 231) is quite possibly from C. Harrisoniana and C. Forbesii, which grow together in the vicinity of Rio.

C. × O'BRIENIANA (p. 232) is from Minas Geraes, and easily found

between C. Walkeriana and C. Loddigesii, both of which occur there.

C. × Imperator (p. 233).—Five years after C. × Victoria-Regina was discovered, M. Schuster was at Caruaru, collecting for Messrs. Linden, and had the "Czar" brought to him, and I told him what it was.

Lælio-cattleya Verelii (p. 233).—At Cabo Frio, in the State of Rio, Lælia Boothiana, Cattleya Forbesii, C. guttata, and Lælio-cattleya amanda are found.

Lælia × Cowani (p. 233) is from the Province of Espirito Santo. In 1895, when collecting L. tenebrosa there, I found such an extraordinary type of L. cinnabarina that I sent it as a new Lælia. Among them were a few with light green long bulbs and flowers as yellow as L. flava. L. harpophylla is from the centre of this State. Some collectors go to the German Colony of St. Izabel, but I always went to the colonies of St. Leopoldino and St. Martha, and there I collected L. harpophylla, L. pumila, L. xanthina, Cattleya Warneri, C. Schilleriana, C. guttata, and C. Schofieldiana. Lælia xanthina is found all over the State of Espirito Santo in small quantity. I found here a pretty little hybrid between L. harpophylla and L. pumila, but I do not know what has become of it.

Lælio-cattleya Binoti (p. 234) comes from Novo Friburgo, and is correctly described. Cattleya bicolor, Lælia pumila, and L. Dayana are all found there together.

Lastly, M. Forget suggests a re-arrangement of the hybrids of districts 4, 5, and 6 of my paper, as follows:—

Province of Pernambuco.

Cattleya × Victoria-Regina and C. × Imperator.

Province of Bahia

(separated from Pernambuco by the provinces of Sergipe and Alagoas).

Cattleya × undulata, Lælio-cattleya albanensis, and L.-c. Pittiana.

Province of Espirito Santo.

Cattleya × Whitei, C. × bahiensis, C. × Frankeana, Lælia × Cowani, and Lælio-cattleya Gottoiana.

Province of Rio de Janeiro.

Cattleya × Claesiana, C. × Dayana, C. × hybrida, C. × Patrocinii, C. × picturata, C. × scita, C. × venosa, Lælia × Pilcheri, Lælio-cattleya amanda, L.-c. Binoti, L.-c. delicata, L.-c. porphyritis, and L.-c. Verelii.

Province of Sao Paulo.

Cattleya × Isabella and Lælio-cattleya elegans.

Province of Minas Geraes.

Cattleya × eximia, C. × O'Brieniana, C. × Schroederiana, and C. × Wilsoniana.

The Province of Santa Catherina and the Amazon or Rio Negro district are left as before.

The above notes form a very useful addition to our knowledge of the distribution of the Brazilian Cattleyas, and at the same time afford some important cultural hints. Their effect is to confirm the suggested parentage of most of the hybrids given at page 236 of my paper, at the same time showing that a few of them require to be reconsidered. The question now is whether the mysterious Cattleya × Measuresii is not a form of either C. × Schrœderiana or of C. × eximia. Also whether the lost C. × Lucieniana may not be an older name for C. × venosa. But further material is necessary in several cases, and it may be better to leave the matter for the present.

In conclusion, M. Forget remarks that Lælio-cattleya Wavrinii (*O.R.* xv. p. 249, fig. 29) cannot have originated from Cattleya Walkeriana and either C. labiata or Lælia Boothiana. He says it has no doubt L. crispa in it, which confirms my suggestion of habitat and parentage. R. A. ROLFE.

PHALÆNOPSIS LINDENI.

THIS interesting plant has now appeared in cultivation, having flowered in the establishment of M. Paul Wolter, of Magdeburg, Germany, who has sent it for determination. It was originally described in 1895 by M. Loher (*Journ. des. Orch.* vi. p. 103), who discovered it in the Philippines, and its history has already been briefly given in this work (*O.R.* xiii. p. 230). I then suspected it to be a natural hybrid, and a form of P. × Veitchiana, because M. Loher remarked that it was somewhat like P. Schilleriana in the leaves, and P. rosea in the flowers, except that they were much larger. He, however, remarked that no other Phalænopsis grows in the spot where he found it. The exact locality was not stated, nor does it appear with a sketch of the plant and a dried inflorescence sent to Kew by M. Loher, but now that living flowers are available for examination I believe it to be a distinct species, allied to P. rosea. The flowers are quite distinct in structure from P. × Veitchiana, and the lip is simply apiculate, without any trace of the anchor-shaped appendages seen in the latter. The inflorescence is not branched, and the flowers are rather larger than in P. rosea, and the segments broader, while the front lobe of the lip is nearly orbicular. The flowers sent by M. Wolter are 1¼ inches across, whitish suffused with light rose, and with a few rose-coloured dots at the base of the sepals and petals. The front lobe of the lip is amethyst-rose at the apex, and whitish behind, with seven radiating lines, shading into brownish at the base, while the erect side lobes are white, with minute orange dots at the base and three purple lines above. The crest is orbicular, glabrous, and slightly concave, this and the unguis of the lip being dotted with orange-brown, while the column is purple. The leaves are said to be silvery-green with a few white spots. It is an interesting addition to the genus. R. A. ROLFE.

PAPHIOPEDILUM × OLIVIA.

The annexed figure represents the beautiful Paphiopedilum × Olivia, and is reproduced from a photograph taken by Mr. G. T'Anson, of the flower which received an Award of Merit from the R.H.S. on August 9th, 1898, when exhibited by Messrs. Hugh Low & Co., under the name of Cypripedium × Olivia. Two days later it received a First-class Certificate from the Manchester and North of England Orchid Society, when exhibited by S. Gratrix, Esq. At that time the parents were thought to be C. tonsum

Fig. 33. Paphiopedilum × Olivia.

and C. concolor, but the second parent was subsequently amended to P. niveum. The flowers were described as most resembling C. tonsum in shape, and the colour ivory white slightly tinged with rose. Shortly afterwards the history was given in more detail. The late Mr. Reginald Young wrote (*O.R.* vii. p. 28): "C. × Olivia . . . is recorded as a hybrid between C. tonsum and concolor, but it is probable that C. niveum was the second parent. I saw two plants in bud at Bush Hill Park in July last, and Mr. E. V. Low told me that they came from America, the parentage given being tonsum crossed with niveum, though it was thought that some mistake

had been made and that C. concolor was the second parent. He has since written, however, that as the flower has become mature the niveum character has developed, and no doubt the record of niveum is correct." The matter was afterwards confirmed by Mr. Oakes Ames (*O.R.* viii. p. 358). Speaking of the plant of P. tonsum given as the frontispiece to that volume, Mr. Ames wrote that it was a particularly good form, and was used by him to obtain P. × Olivia, which in his estimation is the most beautiful of the P. niveum hybrids. There is little further to add as the figure speaks for itself. The veining of the flower is reddish purple, and there are a number of minute dark purple dots on the petals, which can be seen in the figure by the aid of a lens. It is certainly very beautiful.

CALENDAR OF OPERATIONS FOR OCTOBER.

By W. P. Bound, Gatton Park, Reigate.

With October comes a more or less general change throughout the whole of the Orchid houses, and the more gradually this can be brought about the better for the inmates. After such a sunless season as we have experienced this year, when the outside night temperature during what should have been our warmest months, has fallen below 45° many times, the plants in general have not benefited to the degree they should have done by the summer season, and they are now backward in growth for the time of year, and are not ready to withstand the evil effects of our short, dull days. I consider it is highly important that the new growth should be hardened and solidified as much as possible during this month, even if by so doing the growths will not attain the size they would have done under more favourable conditions.

It will not be possible yet to dispense with blinds entirely, but they should only be used on shade-loving plants that would feel detrimental effects from direct sunshine during the early and middle part of this month. Such plants as Cattleyas, Lælias, and Dendrobiums will not need any further shading with blinds if stippling has been used, as by now it has become very thin, yet quite sufficient to prevent any injury to the plants. The sun influence through a thin stippling has a much quicker action on the new growth, both in developing and maturing, than when blinds are used, unless they should be of a very open and light texture. I never mind seeing Cattleyas and the like take a somewhat yellow shade in the foliage during this month, for it will probably prevent any attack of the dreaded black disease. It is plants that are too succulent that most frequently come to grief during the winter months. On all favourable days it will be well to admit a good deal of air to all the houses, and whenever possible the

top as well as the bottom ventilators should be used. It will often be necessary to keep more heat in the pipes to counterbalance the airing, but the growths must be hardened, and when sunshine has been conspicuous by its absence I know no better way to ripen growths than extra airing, with pipe heat to balance.

It will be very essential that a good control is kept over the boiler, for bright days are frequently followed by very cold nights, and although I do not believe in high night temperatures, yet I consider it most important that the outside fluctuation should be met with a good deal of fire heat, making this month as near as possible a link between the summer and winter treatment. This at the same time follows the law that the highest temperature should be at midday and the lowest at six in the morning, for there is a gradual rise from early morning to midday and a gradual fall from midday to the following morning.

The night temperature this month should be higher than would be required in December, even if that outside is the same, so that the reduction should be gradual until the winter minimum is reached. Plants that have been enjoying a free circulation of air would likewise greatly resent being deprived of it all at once, so that where an inch of top air has been given it may be reduced to half or a quarter of an inch, but give some as long as the outside conditions permit. It may be only possible to put it on for an hour, or even less, but even from such a short period as that much good would accrue.

Not only is it necessary to see that a change is made in shading, heating, and ventilating, but it is just as important as regards watering. Many plants will by now have practically finished up their growths, and such, if not producing flowers, will need but little in comparison to what they have been receiving. Others will need a fair supply to keep them on the move and finish up their growths, yet even these will not require anything like the same amount of water as they would have done if they were in the same state say in July. The days are now getting short, the light weak, and evaporation much slower, and all these things must be taken into account. If the houses are maintained as humid as possible, without causing undue condensation, the plants after a good watering will go for several days. It is a great mistake to be always looking over the plants to see if one is dry, unless it is those that resent dryness in any form at any season. If such a plant as a Cattleya was not dry enough for water say on Monday it would take no harm if left till Thursday, and thus much time can be saved, and the plants better treated, than if they are looked over each morning.

Then as far as possible all plants should be grouped, the resting in one batch and the growing ones in another, as it simplifies the work consider-

ably. The temperatures of the various houses should be about the following, modified according to outside conditions:—

	Night.	Morning.	Rising with sun heat to	Without sun heat.
Stove	70°	68°	90°	75°
Cattleya ...	68°	65°	85°	70°
Intermediate ...	62°	60°	85°	68°
Odontoglossum ...	55°	53°	70°	60°

In each case do not dispense with bottom air, but when necessary increase the amount of heat in the pipes to counterbalance the effect of the cold air. In the Odontoglossum house try to leave some air on both top and bottom as long as possible. Whenever the outside temperature is not below 50°, it is quite safe to leave the top ventilators open a little all night during the early part of the month, for the growths make great strides at this season, especially when the outside conditions allow of plenty of fresh air being admitted.

CLEANING HOUSES, &C.—This is perhaps the most important work for this month, and should be taken in hand as soon as possible, so that full light can reach the plants whenever it is desirable. This work takes a considerable time, and unless started early some of the houses do not get the benefit of clear light till late in the year. As far as possible I like to start on the houses that contain plants that prefer a good strong light at this season, washing the inside of the glass roof first, and then, as soon as we are sure that no further shading will be required, wash the outsides too. The houses themselves should next be taken, according to the plants they contain, leaving the Odontoglossum house to the last. When the houses are being washed thoroughly examine each plant also, seeing that all labels are sound and marks quite clear, and staking any growths that need it. Each plant should be sponged, even if no insect pest or filth is in evidence, as a wipe over, when carefully done, will prove very beneficial, and will make the plants present a clean and well-kept appearance. Few things are more gratifying to a grower than to see a house well arranged, and after the structure, plants, stages, and pots have been well cleaned, after having each individual in his hand, he feels easy in his mind that there is nothing amiss with any plant that he does not know about. Most evils when known can be met and cured. It is when they are there undetected that they so frequently prove fatal, and cute observation is a fine virtue for an Orchidist to cultivate.

The cleaning and keeping Orchids clean is now reduced to a minimum compared with what it was a few years ago, before we had so many simple and safe preventatives to aid us. Periodical spraying and fumigating will practically keep all Orchids free of insects, saving the grower much time

and worry; also making it possible to accomplish more work in other advantageous ways than would be possible without their assistance.

In turning over houses of plants a few will be sure to be found on the sickly side, and these should be removed from the batch and placed by themselves, where they can be specially treated. This can often be best done by removing them to another house altogether. I have many times found that a plant will recover much more quickly when removed from the house in which it went wrong, and in a place where the conditions in some way differ. We oftentimes find a change of air and conditions beneficial to us when feeling seedy, and I believe it is equally beneficial to a sickly plant, but with all such plants vigilance is doubly necessary.

My experience in recovering sickly plants is to place them as far as possible in a house that is of a very humid nature, so that the plant has much constant humidity with very little direct watering. In some cases, especially with plants that under ordinary conditions are grown very wet, putting them for a time in a somewhat dry house will cause fresh activity. It is impossible to give any certain way of recovering a sickly plant, and what may prove a cure to one Cattleya may have no effect on another, and after one way has been tried for a time if no improvement is apparent try another. It is a thing we shall always have to meet as long as Orchids are grown, and so long as we think it is possible to find a cure, and not to think that it must die, I believe we shall in most cases prevent the great losses that have been so pronounced in the Orchid family. With Orchids, as with all other kinds of plant life, some must from time to time go wrong, but propagation and the cutting away of back portions will to a very large extent prevent loss in anything like the same number, wherever this system is systematically carried out.

Odontoglossum seedlings.—It is interesting to hear of further success in Odontoglossum raising. The collection of J. H. Grogan, Esq., Slaney Park, Baltinglass, now contains a nice little family of Odontoglossum seedlings, and about 320 have been pricked off from one cross, with others to come. Mr. Grogan considers them very easy to handle when once you have got them. Since Christmas last he has been trying the experiment of not letting the temperature of the Odontoglossum house go below 50° if he can possibly avoid it, and he considers the improvement from this increase of temperature to be most marked. Extremes of temperature and anything approaching a dry atmosphere in hot weather seem to be the points to be specially guarded against, and at such periods constant attention to the shading and damping down are imperative. It is gratifying to find that these beautiful plants are now being raised successfully in so many different collections.

MEXICAN LÆLIAS.

SOME time ago photographs of some Mexican Lælias were sent by M. Juan Balme, of the Horticultural Centre of Mexico, including one of a natural hybrid between white forms of Lælia anceps and albida. There was also an interesting reference to L. × Crawshayana, of which a few plants had been discovered. As our knowledge of the geographical distribution of the Mexican Lælias is very imperfect, I sent to M. Balme a copy of my paper on "Natural Hybrids of the Cattleya group" in the hope that he might be able to give some additional information from his experience in collecting these plants. M. Balme has sent a very interesting reply, with permission to publish any of the information.

The photographs sent, besides the one mentioned above, are Lælia autumnalis alba, a good white form of L. anceps, and some white forms of L. grandiflora (majalis). A large plant of the pure white L. grandiflora alba shows five flowers, and M. Balme states that this is very rare, and in three weeks' collecting he only found sixteen good plants. But he found three distinct but allied forms, one tinged with transparent pale pink, and the lip white with some yellow in the throat; a second, white with a little pink at the base of the lip; and a third, white with pale pink lip, and the markings rather darker pink. These are included in another photo, showing a neat little group, bearing quite a lot of flowers, but the characters mentioned cannot, of course, be shown in a photograph.

M. Balme remarks that he had not paid great attention to natural hybrids, and he thinks that some were passed over as small flowers of the type, but he adds:—"I shall now study all the varieties, and shall be glad to send flowers and all other information wanted, and hope to find a few new varieties." The following are Mr. Balme's remarks on the six natural hybrids included in my paper. The page is given in brackets:—

L. × CRAWSHAYANA (p. 224).—"I think the parents are L. anceps rosea and L. albida rosea, because these two varieties grow in the same district in the State of Vera Cruz, but L. autumnalis grows elsewhere. I have found a few plants of it there, and the flowers were similar in form to L. anceps, but small in size, though larger than L. albida. There are five or six flowers on the scape." This appears to have been Mr. Crawshay's original idea of the parentage, and it would be interesting to have a dried flower, so as to see whether the two plants are identical.

L. × GOULDIANA (p. 227).—"I think this issued from L. furfuracea and L. autumnalis, or furfuracea splendens and L. albida, not L. autumnalis and L. anceps, because these grow in very distant districts. The variety of L. anceps that grows near L. autumnalis is the white form, but in all parts it is cultivated in the Indian gardens on the trees and Opuntias."

L. × EYERMANIANA (p. 229).—"This I think came from L. furfuracea, and L. majalis, which grow in the State of Jalisco, not L. majalis and L. albida, which do not grow in the same region."

L. × LEUCOPTERA (p. 229).—I think this came from L. albida and L. furfuracea, which grow in the State of Oaxaca. L. rubescens also grows here, and I hope to find a few hybrids with it." This is interesting, as it agrees with my suggestion.

L. × FINCKENIANA (p. 230).—"This I think agrees with one I found in the State of Oaxaca, and the parents are a white L. anceps and L. albida. The flowers have many resemblances to L. anceps, but there is no gum on the scape, and it has the same scent as L. albida. The leaves are of the albida type, also the pseudobulbs, except that they are longer, as long as in L. autumnalis."

L. × VENUSTA (p. 232).—"I think this is a hybrid between L. autumnalis and L. furfuracea, which grow in the same district in the State of Michoacan. I have found a little district in the State of Jalisco where L. furfuracea and L. majalis grow very near together, but I think the former suggestion most correct."

LESSER-KNOWN ORCHIDS.

THE afternoon lecture at the R.H.S. meeting held on September 3rd was given by Mr. F. W. Moore, V.M.H., Curator of the Royal Botanic Gardens, Glasnevin, and was illustrated by a number of interesting lantern slides. The subject was "Lesser-known Orchids," and the lecturer spoke of giant and pigmy Orchids; species having some peculiar habit, structure or appearance; pendulous growing kinds; and others that are remarkable for requiring some special cultural treatment.

Amongst the largest of Orchids are Grammatophyllum speciosum, Arachnanthe Lowii, and the very rare Eulophiella Peetersiana (the latter figured as the frontispiece to the sixth volume of this work). Cyrtopodium Andersoni bears an inflorescence which reaches a height of over 4 feet. Cypripedium Lindleyanum at Glasnevin developed leaves 2 feet 3 inches in length, and 3½ inches in breadth, whilst the flowers were borne on inflorescences 4 feet 9 inches high. Arachnanthe Lowii produced six inflorescences at Glasnevin, measuring from 6 to 7 feet long, and it is curious that this species produces dimorphic flowers, for the basal ones are quite different both in shape and colour to those on the upper portions of the inflorescence. The cause of this is not yet known.

Among pigmy Orchids, Mr. Moore enumerated Pleurothallis astrophora, P. hypnicola, P. Simmleriana, and P. lateritia. Pleurothallis hypnicola is one of the smallest of Orchids, its flowers being so inconspicuous that they can scarcely be seen. Maxillaria funerea, Masdevallia nidifica, and

Megaclinium minutum are dwarf representatives of three other genera. The lecturer referred to the curious and striking Arachnanthe annamensis, which produces an inflorescence bearing eight to ten flowers, each 5 inches in length and with transverse bars of yellow on a red ground. Some of the most curious adaptations of Orchids are to be found in their labellums. In some species this organ is fleshy, as in Stanhopea, and in others, such as Brassavola, it is hairy, but fixed. In Bulbophyllum, however, it is not only hairy, but also hinged, so that it moves with the slightest displacement of air. Bulbophyllum barbigerum is a well known species, but B. tremulum is not so commonly seen. It has a heavy fringe of hanging hairs, which gives the plant a singular appearance. The curious habit of growth of Masdevallia deorsa was referred to, and Mr. Moore stated that this species refuses to grow in any but a pendulous position. Lycaste Dyeriana dies if it is not allowed to grow with its roots uppermost. The species was flowered at Glasnevin in 1896. A curious adaptation of growth is seen in Epidendrum vesicatum. The leaves of this plant form a cup, and the upper pair enclose the flowers and form such a cavity, that were they in the normal upright position the flower-spike would become rotten, owing to the presence of water.

Other species of Orchids which require a pendulous position are Brassavola nodosa, Cattleya citrina, and Scuticaria Steelii. In opposition to this habit of growth are varieties which must be grown in a perfectly upright position, with their growths erect. Cœlogyne triplicatula, when planted in an ordinary flat manner, refused to grow, but it was trained erect, and it succeeded splendidly. It is a very scarce species, with brownish-yellow flowers, having darker lips, with markings on the keels. Some Orchids are self-fertile to a high degree, and of this class may be mentioned certain forms of Dendrobium Brymerianum, but, as is to be expected, the flowers of such forms are quite unimportant in appearance. Cymbidium grandiflorum (syn. C. Hookerianum) seldom opens its flowers, which are self-fertilised.

A curious plant is Pleurothallis immersa. The flower-spike appears to develop from the leaf blade about half-way up, and the growth is not contiguous. The usual appearance of an Orchid flower is with the lip in the lower position, but this is due to torsion in the ovary, and when, as in Eria globifera, the torsion is not present the lip is uppermost, and what is really the correct position of the flower appears abnormal.

The lecturer also referred to Orchids having a peculiar growth of pseudobulb and foliage, including Hexisia bidentata and Hexadesmia crurigera. Mr. Moore stated that the genus Maxillaria contains several species with remarkable flowers, one of the most interesting being M. fractiflexa, which has curiously twisted sepals and petals.

CATTLEYA PERCIVALIANA TRILABIATE.

In January, 1903, a remarkable three-lipped flower of Cattleya Percivaliana appeared in the collection of A. H. Hills, Esq., of San Francisco, and was sent to us, also a photograph. Its history was given at the time (*O.R.* xi. pp. 43, 319), and the photograph is now reproduced. As will be seen by the figure, the sepals and petals are normal, but the lip is broken up into three, all equally perfect, but smaller than usual. The centre one occupies the position of the normal lip, while the two others are lateral, occupying the position of the lateral stamens of the outer staminal whorl of a typical monocotyledon. It is the union of these two lateral stamens with the

Fig. 34. Cattleya Percivaliana trilabiate.

median petal that produces the lip of an Orchid, and the present instance is a good example of a lip breaking up into its original elements. It is true that the lateral pair of lips has not reverted to normal anthers, but an example of this in Cattleya labiata has been recorded (*O.R.* ii. p. 358). In that case this pair of organs had broken away from the median petal, and wandered up the column, there developing as normal anthers. Thus there were three perfect anthers with twelve pollinia, at the apex of a perfectly straight column, while the lip was replaced by an ordinary petal, both as to shape and colour. Curiously enough, in the second flower on the inflorescence the column had broken up, and was much smaller than usual, with-

out any anther, while there were two perfect lips, and one petal, somewhat modified in shape and colour. The present example is quite different, being the fission of a single lip into three, similar in shape, colour, and texture. This peculiarity is probably accidental, for Mr. Hill remarked that another plant that gave a two-lipped flower in 1902 came perfectly normal the following year. A photograph of this was also sent, showing both sepals and petals normal, the latter being very broad, but the lip was divided into two, smaller than usual, and very undulate. Such instances are very interesting and instructive, though they are seldom as beautiful as the normal flowers.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on September 3rd last, when there was a very fine display of Orchids, and the awards consisted of one Lindley and four other medals, two First-class Certificates, three Awards of Merit, and one Botanical Certificate. The meeting was notable for the presence of a group of the remarkable Lissochilus giganteus.

The Hon. Walter Rothschild, Tring Park (gr. Mr. Dye), staged a group of six fine plants of Lissochilus giganteus, bearing between them nine flower-spikes, about seven feet high, and each bearing about twenty to thirty beautiful lilac-purple flowers, the Silver-gilt Lindley Medal being awarded. The plants are grown at Tring as semi-aquatics, together with L. Horsfallii, which was exhibited last year. An Award of Merit was given to the large and handsome Stanhopea platyceras, Rchb. f., and a Botanical Certificate to Eulophia ensata, Lindl. (*Bot. Reg.* t. 1147), a South African species seldom seen in cultivation.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), sent the handsome Brassocattleya Madame Hye, a fine example of Oncidium Jonesianum, the handsome Cattleya × Iris, Holford's var., and cut spikes of Vanda Sanderiana. A First-class Certificate was given to Brasso-Lælio-Cattleya Rowena (L.-c. Doris × B. Digbyana), a large and striking bright yellow flower, and an Award of Merit to Sophro-Lælio-Cattleya Phyllis (Sophrolælia læta × C. Lawrenceana), a dwarf hybrid having brilliant rose-purple flowers. They are described on another page.

Walter Cobb, Esq., Rusper (gr. Mr. Salter), showed Cattleya × Iris, Dulcote var., and C. × Ashtoni.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), sent the remarkable Cirrhopetalum appendiculatum, Chondrorhyncha Chestertoni, and a clear yellow Brassolælia fladosa (L. flava × B. nodosa).

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent the

handsome Cattleya × Hardyana, Countess of Derby, having white sepals and petals and a very richly coloured lip.

Messrs. James Veitch & Sons, Chelsea, staged a very fine group, consisting chiefly of hybrids, to which a Silver Flora Medal was awarded. It contained a good series of Lælio-cattleya bletchleyensis, L.-c. × Wellsiana, L.-c. Dominiana, L.-c. Parysatis, Brassocattleya Digbyano-Warscewiczii, B.-c. Ena (C. Lawrenceana × B. Digbyana), Brassolælia Digbyano-purpurata, Cypripedium × James H. Veitch, and others. A First-class Certificate was given to Cattleya × Iris, His Majesty (C. bicolor × Dowiana aurea), a remarkable form originally raised and exhibited by Messrs. Charlesworth, to whom a similar Award was voted but withdrawn because a flower was not handed in for painting.

Messrs. Charlesworth & Co., Heaton, Bradford, also staged a very fine group, which gained a Silver Flora Medal. It contained a fine series of the beautiful and variable Cattleya × Iris, C. × Atalanta, C. × Mrs. Pitt, C. × Fowleriana, C. Gaskelliana vestalis, and a number of fine Lælio-cattleyas, Brassocattleya Digbyano-Warscewiczii, some good Odontoglossum × Rolfeæ, and others, the remarkable Cirrhopetalum ornatissimum, several good Ancistrochilus Thomsonianus, Miltonia spectabilis Moreliana, M. vexillaria robusta, some good M. v. Leopoldi, Bulbophyllum Dearei, Cymbidium erythrostylum, Vanda Kimballiana, a fine specimen of Epidendrum prismatocarpum, and others.

Messrs. Sander & Sons, St. Albans, also received a Silver Flora Medal for a beautiful group, containing a series of Cattleya × Davisii (velutina × Hardyana), a very pretty and variable hybrid, C. × Ethelreda (C. × O'Brieniana × Dowiana), having pretty blush-white flowers with a rose-purple lip, a fine series of Lælio-cattleya bletchleyensis and L.-c. Henry Greenwood, L.-c. Magnei, the pretty Odontoglossum × blando-nobile, various Cypripediums, and other interesting things.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a good group, containing Cattleya bicolor, C. Gaskelliana alba, C. × Parthenia Prince of Wales, Oncidium oblongatum and var. citrinum, two examples of Sobralia xantholeuca nana, Cypripedium × vexillarium, C. × Gowerianum magnificum, and others.

M. A. A. Peeters, Brussels, received an Award of Merit for Cattleya × Hardyana var. Madame Valcke, a beautiful variety having white sepals and petals, and a rose-coloured lip with a yellow area on either side of the throat and a broad pale-lilac margin.

Messrs. Armstrong & Brown, Tunbridge Wells, sent a pretty little group, including Cattleya × Iris inversa, C. × elatior, C. × fulvescens, C. × Madame Hye, C. × Armstrongiæ (× Hardyana × Loddigesii violacea), a pretty-rose-coloured flower, with an orange-yellow disc to the

lip, and a rose-purple blotch in front, and a pretty hybrid between C. Percivaliana and C. Schilleriana.

Messrs. Hooley Bros., Bitterne Park, Southampton, sent a spike of Cattleya granulosa with twelve blooms.

M. Maurice Mertens, Ghent, showed Odontoglossum × Rolfeæ magnificum, a very large and handsome form.

Messrs. Stanley & Co., Southgate, sent the striking Brassavola cucullata, Cattleya bicolor, and Lælio-cattleya elegans Harrisii, a large and richly-coloured form.

At the meeting held on September 17th there was again a good display of Orchids, and the awards consisted of five Medals, two Awards of Merit, and one Botanical Certificate.

F. M. Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), received an Award of Merit for Sophrolælia Gratrixiæ magnifica (S. grandiflora × L. tenebrosa), a very fine form, having pale reddish buff sepals and petals with darker veining, and the lip pale rose heavily marked with purple-red. The plant bore four flowers and a bud. He also sent Lælio-cattleya W. Balmforth (C. Warneri × L.-c. callistoglossa), most resembling a very fine form of the Cattleya parent.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), received a Botanical Certificate for Epidendrum campylostalix. He also sent a well-flowered example of Cattleya × Hardyana marmorata, C. × Ashtoni superba, Lælio-cattleya Proserpine, Catasetum fimbriatum, C. callosum, and the striking Cycnoches peruvianum.

Mr. Percy B. Awcock, Leatherhead, sent a plant of Odontoglossum grande bearing a spike of seven flowers.

Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. Alexander), sent Brasso-Lælio-Cattleya Hippocrates (L.-c. Hippolyta × B. Digbyana), rosy lilac with some greenish yellow on the disc, the striking Brassocattleya Pluto, Lælia × amœna (pumila × anceps), and Cypripedium × Cynthia (Charlesworthii × Chamberlainianum).

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya × Adula, Mrs. Francis Wellesley (bicolor × Hardyana), a very pretty form, having greenish buff sepals and petals tinged with rose, and the front lobe of the lip ruby purple, with some orange markings on the isthmus, and small blush white side lobes; also C. Mrs. Frederick Knollys (granulosa Buyssoniana × Bowringiana), having purple sepals and petals, and a three-lobed lip, which is deep violet purple in front with a whitish tube and some sulphur yellow in the throat.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very fine group, to which a Silver Flora Medal was awarded. The centre was occupied by

some well-bloomed plants of Vanda Kimballiana, and near by were several handsome forms of Cattleya × Iris, C. Fabia, C. × Germania, with good forms of Odontoglossum × Phœbe, O. × Othello and others, Cypripedium × Daisy Barclay, Megaclinium falcatum, Eria stellata, Camaridium ochroleucum, Bulbophyllum hirtum, a fine series of Dendrobium Phalænopsis varieties, including the white D. P. Rothschildianum with some pink veining on the lip, and several beautiful Sophronitis hybrids. The latter consisted of Sophrolælia Leda (L. præstans × S.-l. Gratrixiæ), a brilliant rose-purple flower, Sophrocattleya Marcus (C. × Enid × S.-c. Calypso), a very promising hybrid with orange ground colour, tinged with rose, and the throat of the lip yellow, and S.-c. Antiochus (C. Warsewiczii × S.-c. Cleopatra), the latter a very fine thing which gained an Award of Merit. The plant is dwarf and the flower large, the sepals and petals bright purple rose, the disc of the lip yellow, and the lobes of the lip ruby-crimson.

Messrs. Armstrong & Brown, Tunbridge Wells, received a Silver Flora Medal for a fine group, containing about fifty plants of the handsome Cattleya × Iris, raised from C. bicolor and C. Dowiana aurea and the reverse cross, and showing a wide range of variation, several good forms of C. × Armstrongiæ, a good selection of Odontoglossum crispum and Dendrobium Phalænopsis, Bulbophyllum Dearei, the richly-coloured Cypripedium × Fowlerianum, C. × Milo, Cobb's variety, C. × Kimballianum, and others.

Messrs. J. W. Moore, Rawdon, Leeds, also received a Silver Flora Medal for a good group, containing several forms of the handsome Cattleya × Iris, Oncidium crispum aureum, a beautiful yellow variety, a very fine form of Vanda suavis, a good specimen of V. cœrulea, Cœlogyne ocellata, C. corrugata, a well-bloomed Lycaste xytriophora, several good Odontoglossums, including a prettily spotted form, and others.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a fine group, including numerous showy Lælio-cattleyas, among which L.-c. bletchleyensis illuminata was particularly fine and richly coloured, some good Cattleya × Iris inversa, C. × Pittiana rubra, C. × Castræana (Loddigesii × Hardyana), with lilac-tinted flowers, and a white lip with some yellow in the centre, good forms of Cypripedium Godefroyæ leucochilum, and other interesting things.

Messrs. James Veitch & Sons, Chelsea, also received a Silver Flora Medal for a fine group, including some good forms of Lælio-cattleya bletchleyensis and L.-c. Haroldiana, good examples of L.-c. Wellsiana, L.-c. Hermione, L.-c. Tenos, several good Cattleya × Browniæ and others, Cypripedium × H. Ballantine, C. × Rothschildianum superbiens, C. × Numa var. nigra, C. × James H. Veitch, &c.

M. Mertens, Mont St. Amand, Ghent, showed two hybrid Odontoglossums, Miltonia vexillaria Leopoldi, and a few others.

Messrs. William Bull & Sons, Chelsea, staged a number of Orchids in a group of ornamental-leaved plants, noteworthy among them being some good forms of Cattleya × Pittiana and Lælio-cattleya Clonia.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on September 19th, when there was only a moderate display of plants, but the quality was fairly up to the standard. The following members of the Committee were present: Messrs. E. Ashworth (Chairman), A. Warburton, F. W. Ashton, A. J. Keeling, F. K. Sander, W. Stevens, C. Parker, W. B. Upjohn, J. C. Cowan, L. J. Ward, R. Ashworth, P. Smith, and, by invitation, Mr. De B. Crawshay.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), had First-class Certificates to Cypripediums × Maudiæ magnificum, C. × Shillianum and C. Godefroyæ leucochilum confirmed, and gained Awards of Merit for C. × Kubele grandis and C. × Leander magnificum. These confirmed First-class Certificates count as points in the Sander Cup competition. In Mr. Thompson's group, which gained a Bronze Medal, was also a very fine C. × Lord Derby, and one or two good C. Charlesworthii with extra fine dorsal sepals.

G. W. Jessop, Esq., Rawdon, Leeds (gr. Mr. Wilkinson), gained an Award of Merit for Cattleya Iris var. delicata.

Wm. Bolton, Esq., Wilderspool (gr. Mr. Cain), sent a specially fine Odontoglossum × Rachel var. Bertha, which gained an Award of Merit. The leading bulb was quite five inches high, and broad and thick in proportion.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), received Awards of Merit for Miltonia × Binoti, Cypripedium × Bella, and C. × Rose (Spicerianum magnificum × T. B. Haywood), the latter being a very fine thing, though the lip was inclined to be a little coarse.

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), received Awards of Merit for Cypripedium × Edwardii superbum and the fine C. × Memnon Closes Hall var.

Messrs. Moore & Co., Rawdon, Leeds, sent a fine group of plants, in which were included many varieties of the beautiful Cattleya × Iris, C. × Adula (bicolor × Hardyana), Lælio-cattleya Invernia, and several good Odontoglossums, a Silver Medal being awarded.

Messrs. Hugh Low & Co., Enfield, sent several plants, including two very fine well-flowered Lelio-cattleya elegans, a Vote of Thanks being accorded.

Messrs. A. J. Keeling & Sons, Bradford, staged a nice group, in the centre of which stood a good pan of Cypripedium × Bella, with thirteen

flowers. The rare Bulbophyllum Dearei, Miltonia Crashleyana alba, and the pretty Lælio-cattleya Millie (L. Jongeana × L.-c. Ernesti) were also included, along with several good Cypripediums, the group gaining a Bronze Medal.

ODONTOGLOSSUM NOBILE AND O. PESCATOREI.

It has long been known that Odontoglossum nobile and O. Pescatorei are synonymous, and although the latter name has been generally used in gardens, the former has priority by about three years, hence its adoption in several recent papers. M. Lucien Linden now writes from Brussels objecting to this change, and remarking that the name O. Pescatorei and not O. nobile is the one to be adopted. He calls attention to a note given in *Pescatorea*, when the species was figured there (t. 1), pointing out some slight mistakes in the original description of O. nobile, and remarking that when Dr. Lindley described the species he did not recognise with certainty in O. Pescatorei the O. nobile of Reichenbach. "To-day," the note proceeds, "the identity of the two plants is given as positive by the latter botanist, but with generous abnegation this savant renounces the anterior rights of his name nobile by adopting that of Pescatorei, under which the plant is exclusively known in collections." M. L. Linden remarks that the same specific name was adopted in describing the sterling varieties, Veitchianum, Schrœderianum, leucoxanthum, melanocentrum, and others, and concludes: "I think that a name given by Jean Linden, and adopted by John Lindley and Reichenbach filius stands in no need of revision at the present time."

We certainly admit the inconvenience of changing such a long and well-established name, but the law of priority, which is responsible for the change, was not adopted without good and sufficient reasons. It may savour of tyranny not to allow an author to renounce his own name if he chooses, but the existing code allows exceptions to the law of priority in the case of undoubted error—which does not apply here—and this should meet most reasonable objections. The case of O. crispum and O. Alexandræ is nearly parallel, and strong reasons were once urged against reverting to the older name. O. Kegaljani and O. polyxanthum furnish another example, which has hardly been noticed at present. We scarcely think that the objections urged can prevent the adoption of the name O. nobile, though one might almost invoke the aid of the statute of limitations.

Odontoglossum nobile was described by Reichenbach in 1849 (*Linnæa*, xxii. p. 850), from dried specimens collected in the province of Pamplona, by Funck and Schlim, in January, 1847 (No. 1429 of their collection). The author made a new section, Heterochilum, for it, and queried whether it

might not be a new genus. That specimen I have not seen, but there is an earlier one in Lindley's Herbarium, collected by them at the same spot in February, 1846. It is without number, and but for the different date I should have taken it for the original specimen. Schlim collected the species again in May and June, 1851, in the provinces of Ocana and Soto, at 2,600 métres altitude (No. 388 of his collection).

Some time afterwards the species was figured and described by Dr. Lindley, under the name of "Odontoglossum Pescatorei, *Lind. Cat.*," the author remarking that a specimen in flower had been sent last April by M. Linden, which had received a prize at Brussels on March 14th. Lindley added: "It has been named after the great and liberal French savant, Mons. Pescatore, whose beautiful hothouses at Celle St. Cloud, near Paris, contain, we believe, the finest collection of Orchids known upon the Continent, and are, perhaps, richer in rare species than even the best in England." Immediately afterwards *Fol. Orch.*, Odont. p. 19—the part being dated October, 1852—Lindley remarked: "Since the publication of this [O. Pescatorei] in Paxton it has occurred to me that it is probably the O. nobile of Reichenbach fil., for which he quotes Funck and Schlim's collection, No. 1429, a number which I do not possess; but unless there is some typographical error in the learned author's specific character which destroys its meaning, his plant must be different." The publication of the figure in *Pescatorea*, however, removed this objection, and there it is stated that the species flowered in Europe for the first time in 1851. Its subsequent history is well known.

R. A. R.

DENDROBIUM ACUMINATUM.

THIS is a very distinct Philippine species of Dendrobium, belonging to the section Sarcopodium, which was described some time ago from dried specimens (Rolfe in *Ames Orch.* i. p. 86), and is now figured from a photograph of a fine native specimen (*Gard. Chron.* 1907, ii. p. 210, fig. 88). Mr. W. S. Lyon, of the Bureau of Agriculture, Manila, remarks that while in habit and foliage this plant closely resembles D. cymbidioides, Lindl., its whole inflorescence is more than double the size of that species. The flowers, which measure two or more inches across, are a deep peach-pink, shading to darker towards the base of the perianth, and the labellum passes to a rich, velvety wine-red. When the sun is shining the flowers disseminate the unique fragrance of noyeau, but in cloudy or overcast weather they appear to be quite scentless. The plant illustrated was found bedded in moss, growing on hardwood in the province of Bataan, 30 miles west of Manila, at an elevation of 2,300 feet. It would be worth introducing into cultivation.

SPIRANTHES GRACILIS.

One of the great charms of the Orchid family is the infinite variety which its flowers assume, in form, structure and colour, and although the one represented by the annexed figure is not a cultivated Orchid it will probably interest many readers. It shows the curious North American Spiranthes gracilis, natural size, and is reproduced from a photograph sent to us by an enthusiastic Orchid cultivator, Mr. F. J. Le Moyne, of Winfield, Tennessee, who has also turned his attention to some of the native Orchids of the district in which he resides. The genus Spiranthes takes its name from the

Fig. 35. Spiranthes gracilis.

fact that the flowers are arranged on the spike in a spiral form, as is so well shown in the figure. Spiranthes gracilis, Beck, is a common and widely diffused species in North America, and also somewhat variable. Mr. Le Moyne remarks that the photograph shows the different forms that the flower spikes take. The flowers are white, with a tinge of green in the centre, and are arranged in a single rank, which winds round and round the stem in corkscrew fashion. The leaves are ovate or elliptic, and the thickened roots fasciculate. It is very graceful, and we have nothing quite comparable with it among cultivated Orchids.

SOME OTHER NORTH AMERICAN ORCHIDS.

This photograph was accompanied by some interesting notes, which we here summarise. They were received some time ago, and relate to the summer of 1901.

Having been engaged upon some field work here in the low mountains of Northern Tennessee, writes Mr. Le Moyne, I have kept a good watch for native Orchids. The work began after the middle of July, and consequently those species that bloom in the spring and early summer were not met with in flower, though six of these were found and identified by their growth.

Of the later blooming kinds two Habenarias were found in some abundance towards the end of August, generally growing in the open space along the sides of the railroad, where their bright colours were conspicuous among the many other flowers. They were, H. cristata, with its crowded heads of orange-coloured blooms, and H. ciliaris, with heads of larger rather paler flowers, but much prettier, by reason of their longer very deeply fringed lip. Both were growing in clear open spaces, generally without shade other than that given by the grass or other low plants growing with them. The soil is a good open loam, which is wet for a good part of the year.

Early in September Pogonia pulchella was found growing in shady woods, the flowers being sometimes white, sometimes pale pink, always very pretty and delicate. The finest specimen found was eight or ten inches high, and bore two large seed pods. In one or two localities it was found in considerable numbers, growing in the light leaf-mould which lies in a thin layer over the clayey loam.

At the same time two plants of Tipularia discolor was found growing in the same kind of soil, but in even deeper shade. It is very graceful and delicate, as may be seen by the photograph, though the colour is not at all bright. Two of the flowers had been fertilised, and I have since gathered two good seed pods from the plant.

Early in September Spiranthes simplex was found, and a few days later S. gracilis. They are much alike, both growing in open grassy plains in rather sandy loam, but have not hitherto been found intermixed. They are easily distinguished, the flower of S. simplex being pure white, while those of S. gracilis have a decidedly green throat, and the roots are markedly different, the first having a single tuber, the other thick forked roots in a fascicle.

About the end of the month Corallorhiza odontorhiza was found. It grows abundantly over the mountains here in shady places, and in the light leaf-mould. A few days ago a colony of what seemed to be some hundreds

of plants was found. Though interesting botanically it is certainly not beautiful, both plant and flower being dull-coloured, though if the flower be closely examined when fully open it shows a rather pretty white lip with purple markings.

Lastly, in the early days of October, Spinanthes cernua was found growing in grassy situations, where it gets more moisture than the other two Spiranthes, though the soil is poorer. The flowers are much larger than in the two others, and the stems dwarfer and stouter.

Photographs of all but the two Habenarias were sent, and form a very attractive little group, recalling to some extent our own native species, among which Spiranthes, Habenaria and Corallorhiza are also represented.

THE HYBRIDIST.

Sophrocatlælia Phyllis.—A very beautiful hybrid from the collection of Major G. L. Holford, Westonbirt, Tetbury, which received an Award of Merit from the R.H.S. on September 3rd last. The parents are Sophrolælia læta ♀ and Cattleya Lawrenceana ♂, and Mr. Alexander remarks that the plant has taken much after C. Lawrenceana in habit, as well as in the shape of the flower, and he thinks that when the plant becomes strong the inflorescence will bear several blooms. The flower is of excellent shape, and the colour is bright rose-purple, with the front of the lip claret-coloured.

Brassocatlælia Rowena.—Another very brilliant hybrid from the same collection, which received a First-class Certificate at the same meeting. It was derived from Lælio-cattleya Doris ♀ and Brassavola Digbyana ♂, and has a large and well-shaped flower, of a clear bright yellow, with some green lines at the base of the lip. It has retained much of the Brassavola shape, but the lip is not half so deeply fringed. Mr. Alexander remarks :—"I have flowered some of this same batch before, and all were coarse shapeless flowers of a pale pink colour. Now one turns up pure yellow, but what has become of the colour of the Cattleya Trianæ used to produce L.-c. Doris ? It will be interesting to watch the rest of this batch flower.

Lælia × Sidneana.—A batch of this pretty hybrid between L. cinnabarina and L. Jongheana has been flowering in Mr. H. A. Tracy's Orchid Nurseries, at Twickenham, for the last two months, and still there are many of the plants in bloom and bud. It has the habit of L. × Latona, and the flowers equal that variety in size and shape, but the sepals and petals are narrower. The different varieties vary in colour from clear apricot yellow, with orange-coloured lip, having a rose-coloured margin, to light orange, which is tinged and veined with reddish rose, and with mauve margin to the lip. Its free blooming qualities make it a desirable decorative plant.—*Gard. Chron.* 1907, ii. p. 230.

LÆLIO-CATTLEYA JASON.—A flower of a pretty hybrid, which is believed to have originated from Cattleya × Hardyana and Lælia × Latona, is sent from the collection of G. S. Jessop, Esq., Cliffe Cottage, Rawdon, Leeds. It is fairly intermediate in size, and has light salmon-rose sepals and petals, flushed with yellow at the apex; while the lip is strongly three-lobed, with the front lobe very undulate and rich crimson-purple in colour, the isthmus and apex of the side lobes deep yellow, and the lower part more or less suffused with purple. It flowered for the first time last year, and is likely to develop into a good thing.

CATTLEYA × BAHIENSIS.

THE publication of the note on Cattleya × bahiensis (page 279) has elicited a very interesting letter from M. Forget, collector for Messrs. Sander & Sons, and discoverer of the plant. He remarks:—"It was found in the Lælia tenebrosa district, where I also collected a mixture of C. Warneri, Schofieldiana, Schilleriana and velutina in more or less quantity. But this is hundreds of miles away from the Province of Bahia. Lælia tenebrosa is from the southern province of Espiritu Santo, adjacent to the northern part of the State of Rio, and about one day by railway from the city of Rio." The erroneous record of the habitat of L. tenebrosa as Bahia is unfortunate, for it is now clear that the specific name of Cattleya × bahiensis is erroneous, and it had better be changed before it gets more firmly established. The specific names of Forgetiana and Wavriniana are no longer available, and therefore the plant may be called C. × spectabilis, for it is a notable addition to the genus. Its history illustrates very well the difficulty one sometimes experiences in tracing the origin of a natural hybrid. At the outset, without a clue to either the native country or the species with which it was imported, I thought it must be some hybrid of artificial origin, and even when this was disproved there came the difficulty that the parents were not recorded as growing together. R.A.R.

CYPRIPEDIUM SPICERIANUM FROM SEED.—The *Gardeners' Chronicle* states that Mr. H. A. Tracy, of Twickenham, has obtained a batch of seedlings of this species, by fertilising a very fine form which he had in flower with its own pollen. He obtained a batch of seeds, and raised a good number of plants, some of which are now in bloom. The flowers are of the "magnificum" class, with large, white dorsal sepal, slightly shaded with rose on the lower half, and with a broad, claret-coloured band in the middle. Although the plants are still young, they show a marked advance on the imported varieties, and prove that much might be done with advantage in the matter of seeding good varieties of imported species.

DISA GRANDIFLORA.

A REMARKABLE plant of Disa grandiflora is illustrated from a photograph in a recent issue of the *Garden* (p. 407). It was grown by Mr. T. Jenkins, gardener to Miss Rashleigh, Abbey House, Netley Abbey. Mr. Jenkins remarks that the photograph was taken five years ago, the plant then carrying 150 blooms. The following October he divided it into three, and at the present time the largest, in an 18-inch pot, has ninety-seven blooms, some of the stems being two feet long. The other two plants are in 14-inch pots, and have seventy-four and seventy blooms. He grows them in a large greenhouse, forty feet long by twenty feet broad, all the year round, the house being shaded with "Summer Cloud." After flowering, he keeps them on the dry side until all the foliage dies down, and then trims them up as is done with a maiden-hair fern in March. They begin to grow in October, and flower in August. The soil consists of plenty of sphagnum moss, and a little rough peat, beech leaf mould, crocks of pots, and a little sharp sand. He has had good results with the species for the past twelve years, and in conclusion remarks, "I use rain water always, and the temperature in the winter often drops to freezing point." The plant forms a picture, and such success with this beautiful species is rarely seen.

ORCHIDS IN SEASON.

SEVERAL beautiful Orchids are sent from the collection of Major G. L. Holford, Westonbirt, Tetbury, by Mr. Alexander. Brassocattleya Madame Hye superba is said to be out of the original batch of seedlings, but by far the best of the batch. It is larger than the original, but similar in shape and colour, and is certainly very handsome. Sophrocatlælia Phyllis and Brassocatlælia Rowena are described on another page. There is also a very fine spike of the rare and beautiful Oncidium Jonesianum, a plant now seldom seen in good condition.

A beautiful flower of Lælio-cattleya callistoglossa is sent from the collection of the Right Hon. Joseph Chamberlain, M.P., Highbury, Birmingham, by Mr. Mackay, who remarks that it was purchased as a seedling from Cattleya gigas × aurea, but this is clearly erroneous.

Five beautiful forms of Cattleya × Iris are sent from the collection of G. W. Jessop, Esq., Cliffe Cottage, Rawdon, Leeds, showing much of the remarkable range of colour to which this fine hybrid is subject. One has salmon-coloured sepals and petals and a brilliant amethyst-purple lip, and another is rich brownish orange, with a mottling of yellow on the purple lip, while the others are variously intermediate. There is also a very beautiful Lælio-cattleya Dominiana, with very light sepals and petals and an intense velvety purple lip, forming a very strong contrast.

A very beautiful deep yellow form of Oncidium prætextum is sent from the collection of Sir Trevor Lawrence, Bart., Burford, Dorking. We do not know its history, but it recalls very much the beautiful Oncidium crispum flavum (*Veitch Man. Orch.* viii. p. 28), in which the flowers are recorded as deep yellow, with the central area of each segment paler. Sir Trevor's plant may be described as having light yellow flowers, with the markings very deep yellow instead of brown, forming a very effective combination.

NOTES.

THREE meetings of the R.H.S. at the Royal Horticultural Hall, Vincent Square, Westminster, are fixed for October, the dates being the 1st. 15th, and 29th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on October 3rd, 17th, and 31st, The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

Mr. Henry Ballantine, for many years head gardener to Baron Sir Henry Schröder, who has one of the finest Orchid collections in the country under his care, has been elected by the Council of the Royal Horticultural Society a Victoria Medallist of Horticulture.

The remarkable specimen of Lælio-cattleya elegans from the collection of Major G. L. Holford, Westonbirt, Tetbury, for which Mr. Alexander was awarded a Silver-gilt Lindley Medal by the R.H.S. on August 20th, is figured from a photograph in the *Gardeners' Magazine* (p. 627). It was grown in a large tub, and bore twenty-five flower-spikes and an aggregate of 230 flowers, the largest having thirteen. It is certainly a noble specimen.

Orchid Sale at Schönbrunn.—The *Gardeners' Chronicle* remarks that as a consequence of the overcrowding of the Orchid houses in the Imperial Gardens at the palace of the Austrian Emperer, 2000 plants, as in the previous year, have been offered for sale recently. The plants were put in small lots, and included some that were raised in the Schönbrunn Gardens. One of these novelties carries the name of Cattleya × schœnbrunnensis, and is the result of a cross between C. Bowringiana and C. maxima floribunda. The blooms are said to be of a larger size, darker in colour, and the lip more beautifully marked than those of the parents. Cut blooms of choice Cattleyas, Dendrobiums, and Cœlogynes were likewise sold by auction. Such sales will be held annually at Schönbrunn.

Mr. W. H. Young, who for seventeen years was Orchid grower to the late Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, has purchased the nursery and seed business carried on at the Mercury Nursery, Romford, Essex. We wish Mr. Young every success in his new venture.

We regret to hear of the death of Mr. Leon Duval, the well-known nurseryman of Versailles, near Paris, who was also an enthusiastic Orchidist, and the raiser of numerous hybrids. The deceased, who was sixty-three years of age, was Vice-president of the Societe Nationale d'Horticulture de France. His name is commemorated in Lælio-cattleya Duvaliana, a very handsome hybrid derived from Lælia purpurata and Cattleya Lueddemanniana.

A very fine plant of Grammatophyllum speciosum which has just flowered at the Royal Botanical Gardens, Peradeniya, Ceylon, is figured in a recent issue of the *Gardener's Chronicle* (1907, ii. pp. 168, 169, fig. 69). Although grown there for about forty years it was not until 1898, in consequence of a change in that treatment, it really began to assert its majestic habit. Up to that year it was nursed on an old decaying tree stump under the partial shade of surrounding trees. Thence it was removed to a sunny position and planted in a mound of turf, decayed manure, charcoal, broken bricks, and laterite stones. It soon commenced to grow rapidly, and about a year later threw up six flower spikes. It has since flowered more or less every alternate year, and in July last was bearing twenty-six magnificent inflorescences. From the first appearance of the flower spikes above ground to the visible setting of the first fruit is said to occupy about four months, and two months more are required to ripen the stout pod-like fruits. The minute, brown seeds are produced in great quantity, but attempts to germinate them have not succeeded.

The three spikes on the Kew plant are now in fine condition, with a good many buds at the apex still unexpanded.

The fine range of plant houses, principally Orchid houses, built for Captain Holford by Messrs. Mackenzie and Moncur, are illustrated in a recent issue of the *Journal of Horticulture* (p. 259). The range consists principally of Orchid houses, most of them being constructed of teak wood. They are all provided with slate staging in cast iron framework, and on the top of this staging sparred teak shelves are set. Each of these shelves is supported by cast iron uprights, having a saucer formed at the bottom, which is filled with water to prevent insects getting up to the plants. Each house is provided with holes under the staging for the inlet of fresh air in wintry weather. In some of the houses extensive water tanks are formed

under the staging in the centre, and all of them are fitted with lath blinds supported by iron framework about twelve inches off the glass. It is in these houses that the extensive and well-known Westonbirt collection of Orchids is grown.

ORCHID PORTRAITS.

ANGRÆCUM INFUNDIBULARE, Lindl.—*Bot. Mag.*, t. 8153.

BRASSO-CATT-LÆLIA ROWENA.—*Journ. Hort.*, 1907, ii. p. 267, with fig.

BRASSO-LÆLIO-CATTLEYA ROWENA.—*Gard. Mag.*, 1907, p. 661, with fig.

BULBOPHYLLUM LONGISEPALUM, Rolfe.—*Gard. Chron.*, 1907, ii. pp. 210, 211, fig. 89.

CATTLEYA × IRIS, HIS MAJESTY.—*Gard. Mag.*, 1907, p. 653, with fig.

CATTLEYA × MISS HARRIS.—*Journ. Hort.*, 1907, ii. p. 243, with fig.

CATTLEYA TRIANÆ MEMORIA LINDENI.—*Rev. Hort. Belge*, p. 289, with plate.

CYMBIDIUM HUMBLOTII, Rolfe.—*Journ. Hort.*, 1907, ii. p. 291, with fig.

CYPRIPEDIUM × A. DE LAIRESSE.—*Gard. Mag.*, 1907, pp. 644, 645, with fig.

DENDROBIUM ACUMINATUM, Rolfe.—*Gard. Chron.*, 1907, ii. p. 210, fig. 88.

DISA GRANDIFLORA.—*Garden*, 1907, ii. p. 427, with fig.

LÆLIO-CATTLEYA ELEGANS.—*Gard. Mag.*, 1907, p. 627, with fig.

ODONTOGLOSSUM MACULATUM.—*Journ. Hort.*, 1907, ii. p. 219, with fig.

SOPHROLÆLIA GRATRIXIÆ MAGNIFICA.—*Gard. Mag.*, 1907, p. 688, with fig.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work*].

W.H. We do not see the slightest necessity for this diversity in spelling. When the need arose for a name to distinguish these hybrids between Brassavola, Cattleya, and Lælia the single descriptive word Brassocatlælia was chosen, and we do not see why it cannot be followed uniformly. A very good illustration of this diversity appears on this page, but needless to say we are not responsible.

E.A. Dendrobium macrophyllum.

E. J. S. D. Received with thanks, and we will report shortly. Can you forward a dried flower of the others?

J. M. The lip and column wings are not those of Odontoglossum × Andersonianum, which it somewhat resembles in other respects, and its name is uncertain at present.

Received with thanks. J.M.B., L.F.

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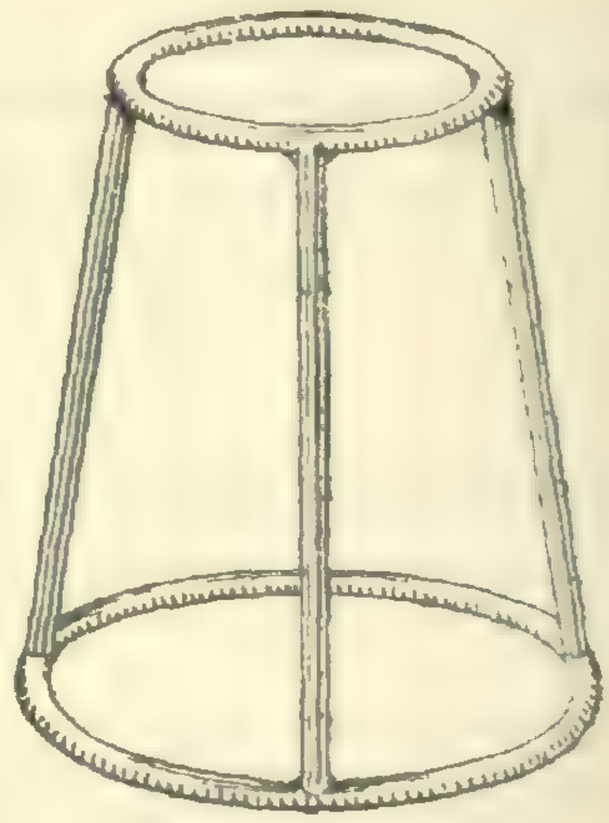

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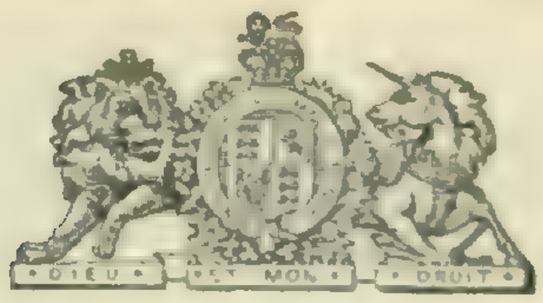

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VOL. XV.] NOVEMBER, 1907. [No. 179.

THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *NOVEMBER*, 1907. [No. 179.

ORCHID COLLECTING.

A VERY interesting lecture on "Collecting Orchids" was given before the Massachusetts Horticultural Society on January 20th last, by Mr. John E. Lager, Summit, New Jersey, and has just been published (*Trans. Mass. Hort. Soc.*, 1907, pt. i. pp. 37—49). Mr. Lager's experience has been in South America, and he points out that an Orchid collector's life is not an easy one, at all events for those who wander from the beaten track in search of new fields, where difficulties of transit for the plants discovered are sometimes well nigh insuperable. He gives an instance where on one of his trips he struck a virgin Cattleya district, which to the best of his knowledge had not been previously visited, and although the plants and varieties were superb, the problem was to get them out, as the nearest point where he could get transportation with certainty was fifty miles away. It is an interesting story how this was eventually accomplished. The methods of collecting and preparing for shipment are detailed, but these we may pass over, giving a few particulars of the species themselves, and the conditions under which they grow.

The most interesting and important fields for collecting are considered to be Colombia first, second Venezuela, and third Brazil, and Mr. Lager doubts whether another region can be found where such great numbers of species occur as the first-mentioned. He enumerates eight different Cattleyas as found there—gigas, gigas Sanderiana, chrysotoxa, chocoensis, Trianæ, bogotensis, Mendelii and Schrœderæ.

C. gigas has a very large territory, scattered over several mountain ranges of Antioquia, in some the varieties being superb, in others poor. In a few isolated places the beautiful C. chrysotoxa occurs, but in such small numbers that collecting it would not pay any longer. It grows on the lower slopes of the mountains, in warmer places than C. gigas, and in somewhat shaded positions. C. gigas is found in perfection on grand solitary trees, in such positions on the trunks or larger limbs as to obtain the full benefit of the breezes and sunlight, yet some branch will afford sufficient shade. "I have seen this Cattleya climb up the mountains," he remarks,

"until actually stopped by the cold; the plants in such localities are as a rule stunted, struggling as they do for an existence, the front part of the plant somehow will push out new leads repeatedly, while the bulbs behind will lose their leaves and die off. Then again, they are found descending the warmer slopes, and in a few places join hands, so to speak, with C. chrysotoxa, and in such localities natural hybrids occasionally occur."

This particular region was found to be extremely interesting for its Orchids. The Central Cordillera is here simply a maze of spurs and ridges in every direction, forming great canyons, valleys, hollows and precipices of every imaginable shape, and where every kind of climatic conditions prevail, from the torrid to the cold *paramos*, and what a storehouse this is for the Orchid lover! "In the lower hollows may be seen large patches of Peristeria elata in perfection, with bulbs of enormous size, and flower stalks six to ten feet high; then again, a few Miltonia Roezlii; somewhat higher up is Cattleya chrysotoxa, modestly tucked away on the branch of a tree, and Oncidium Kramerianum nods here and there in more exposed places." Ascending higher we find the majestic Cattleya gigas, and still higher up we have a veritable botanic garden, with Miltonia vexillaria (*Josephita* or *pensamiento* as this plant is called here) in great profusion. There are also Lycastes in variety, Sobralias, Oncidiums, Anguloas, Odontoglossums, Rodriguezias, and Masdevallias in great variety along the trail. On the banks and rocks, exposed to the full sun, the pretty **Epidendrum fimbriatum grows in masses.**

Proceeding southward on mule-back over a high plateau, after twelve or fifteen days' riding, the traveller arrives at Cartago, in the Cauca, situated at the foot of the Cordillera on the western side, and travelling southward a day or two more arrives right in the heart of the home of Cattleya chocoensis. "This Cattleya, unlike most of the others, occurs in forests on level land which is very swampy; the trees are as a whole small and stunted, and overgrown with moss. Here, strange to say, I saw the most beautiful sight it has been my fortune to see: in these jungles the plants grew by the thousands, the trees being literally covered with them and in full bloom (end of August). I particularly remember that I got my mule under a tree and sitting in the saddle picked a large bunch of flowers; these were particularly fine and large, so different from what we see them under culture, where they only half open. The treatment we give this plant under cultivation probably has something to do with this. Where they grow it is very warm and humid. I noticed in the early morning as soon as the sun reached the forest a dense mist would rise from the ground and would envelope everything; this would gradually disappear as soon as **the sun became stronger."**

The western slope of this Cordillera is not rich in Orchids, explorations

being made up several rivers and canyons, but with poor results. Five plants of Cypripedium caudatum Wallisii were found on one tree, but three weeks' search failed to find another.

"On this same trip I also found a most gorgeous Masdevallia, the flowers very much like M. Veitchii, but larger and finer in every way; its leaves were long, sword-like, and glaucous in colour, some measuring twenty-four inches in length. I found about twenty plants of all sizes in one tree, but not another plant anywhere. As misfortune would have it, these plants never reached home alive. Some time after this I rediscovered it a considerable distance further southward towards the Pacific, and gathered quite a number of plants, packed them and forwarded them to Buenaventura. Here they were retained for nearly two months on account of quarantine regulations, and were consequently lost."

Crossing the valley westward "we find on the western Cordillera along the Rio Dagua the chaste Miltonia Roezlii; in fact this is its home. True it is scattered here and there along the course of the Rio Cauca through the Antioquian Mountains, but not in quantity. Here along the Rio Dagua it grows *par excellence*. The climate is extremely hot and very moist, it fact it rains pretty nearly every day in the year, and water oozes out of the rocks everywhere. On the ledges and rocks large clumps of Cypripedium Roezlii may be seen in luxuriance."

Leaving the beautiful Cauca valley, and crossing the Central Cordillera towards the state of Tolima, by a southern route, Cattleya Trianæ is found in its southern haunts. The trail leads over a very inhospitable region, cold and dreary, the forest in the highest parts giving way to grasses and the inseparable companion of the high plateaus, a giant Gnaphalium. "Along certain ridges on the trail, in clumps of trees, I noticed Masdevallia racemosa in full bloom; these grew in the thickets in semi-darkness, and I am sure that the rays of the sun could never penetrate to their retreats, yet here they flourished, unmindful of the cold and dreary atmosphere and darkness. Masses of scarlet and red colours could be seen when peeping through the thickets."

Reaching the lower foothills on the eastern side of the Central Cordillera one can expect to get a glimpse of Cattleya Trianæ. "In the extreme southern part of Tolima the three chains of Andes are very close to one another, and owing also to the continuous rise of the country from the Caribbean sea southward, we find here Cattleya Trianæ scattered everywhere: on the lower mountain sides, in the valleys, in hollows between grassy hills, or in fact any place where there are clumps of trees. The variation of type is very great. Every little hill or stream has its own particular type, but owing to the long distance to a place of shipment these plants will be undisturbed for some time yet, or until every-

thing within easier reach is exhausted. In moving northward we gradually descend, and the plants disappear from the valleys proper and follow the mountain sides and its indentations at an elevation of 2,500 to 4,500 feet above sea level. It persistently follows the mountain slopes at this elevation for about 400 miles, and possibly more." Further north is Ibagué, famous as the place where C. Trianæ was first collected, though now very few plants were left in the mountains, but along the Rio Combeima a few plants were found, and plenty at the little village of Miraflores, a day's riding south-east from Ibagué, where the varieties were superb.

About Miraflores there were some beautiful sights. "The entire hills from foot to summit were literally covered with Sobralia violacea in full bloom, in all shades from pure white to dark lavender. The best time to see this show was early morning, before the sun became too strong; with the night dew still lingering on the foliage and with the galaxy of colours on such a large scale, the sun finally rose higher and higher, reflecting the colours in a way impossible for me to describe. Towards mid-day thousands of flowers began to drop off. This continued throughout the day, but early next morning there was a new display. At the foot of these hills where the soil was rich, and the plants partly shaded by trees, they attained five to six feet in height. In ascending the hills the plants gradually diminished in height, until at the top they were only a few inches high. There was no difference, however, in the size of the flowers. Almost on the naked rocks would grow the Epidendrum ibaguense, also Vanilla planifolia [? V. Pompona.—ED.]: this latter one always seeking the companionship of a dwarf shrub, to which it would cling, and display its fine dull yellow Cattleya-like flowers."

"In crossing the Magdalena River going north-east we find Cattleya gigas Sanderiana in the state of Cundinamarca. This Cattleya is without a doubt the grandest of all the South American Cattleyas. The enormous size of the flowers and as many as ten on a spike is a sight worth seeing. Unfortunately this Cattleya is not at all plentiful, and its territory is very small, that is to say of the true type, for on the same mountain chains, towards Muzo, there are quantities of plants, but the type is inferior in every way."

"In this same vicinity, growing in somewhat warmer places than C. gigas Sanderiana, we find along the streams C. bogotensis, although not in quantity, also several Stanhopeas, Oncidiums, &c. Still, further northward, in the State of Santander, we find C. Mendelii, unfortunately very sparingly. It occurs in several places, but the long transportation is a very serious drawback. . . . In this same State, at higher altitudes, Odontoglossum Pescatorei occurs, also several fine Masdevallias, such as M. Veitchii. M.

Harryana, &c. Also the pretty Oncidium cucullatum, Anguloas, and many more."

From Santander, crossing the Eastern Cordillera in a straight line, and after fifteen days travelling, four or five of them spent in tramping eternal snow, the traveller reached the other side, in the immense and grand region of Cazanare. "Here it is we find Cattleya Schroederæ in all its glory. The first plants were taken out of this region in 1893, so it is, comparatively speaking, a virgin region, and will remain so for some time, for many reasons. C. Schroederæ is to-day the most abundant of all Colombian Cattleyas. It is found from about the 3° northern latitude up to about the 7° but, like C. Trianæ, it runs along the lower edges of the woods. The plants are of extraordinary vigour, and the size and the varieties are superb, compared with those of the older district of Villa Vicencio, whence plants are still gathered, it being a less risky region."

Having taken in all the Colombian Cattleyas, Mr. Lager says a few words with respect to other Orchids and their distribution. He explored along the Eastern Cordillera as far south as Garzon, in the south of Tolima, and on the Central Cordillera as far as Pasto, finding Odontoglossum crispum in several places on the eastern chain, and on the central chain in two places, far apart, and never in any great quantities "until Pasto in southern Cauca was reached; here are any amount, but of the type called Lehmanni, with the characteristic five spots on the lip. Miltonia vexillaria is another plant whose home is Antioquia, yet a few plants have been found in Tolima, and then we lose sight of it again, to reappear in a slightly different form in Ecuador, under the name of M. vexillaria rubella." Sonson, south of Medellin, is a great region for Masdevallias, which occur everywhere in all shapes and colours.

Venezuela has four species of Cattleya, C. Mossiæ and C. Percivaliana in the Cordillera de los Andes, C. speciosissima in the Cuspanera Cordillera, and C. Gaskelliana in the north-eastern part. Going southward to the Guianas, C. Lawrenceana occurs in the Roraima Mountains, and further south in the mountains above Pernambuco the well-known C. labiata, which Mr. Lager says is reported to be becoming scarce, though we were led to believe that the supply "would last to the end of time."

On looking at the map someone might ask if there are not plenty of Orchids in the immense territory lying between the Orinoco on the north and the Amazon on the South, including such rivers as the Rio Negro and its tributaries, Rio Guayabero, Rio Meta, &c. "Cattleya Schroedera is probably the only Cattleya of any account in this region, although the greater part of this country is still practically unknown: but what is known has not produced anything surprising in Orchids. Almost the whole territory is very uniform in climatic conditions, and without any high

mountains, so we can reasonably expect that no great novelties are in store for us here."

Cattleya Eldorado is found in quantity along the northern banks of the Amazon, beginning at Manaos, also along the Rio Negro; C. superba is also found there. This Cattleya also occurs in several other localities, such as on the Cazanare, Rio Meta, Orinoco, and even south of the Amazon, while C. Eldorada does not cross the Amazon southward.

In conclusion, Mr. Lager thinks the prospects for future Orchid collecting are not bright, the constant hunting for these plants during the last few years having led a number of natives to embark in the business, which, though not in itself wrong, is done in many instances by those who have no knowledge of the business, and last year alone several hundred boxes reached New York, the plants in which, through careless handling, were ruined completely, a condition of things that does more harm in one year than a collector would do in ten.

HABITAT OF ODONTOGLOSSUM CRISPUM.

UNDER the title of "Variations in Odontoglossum crispum" two articles from the *Gardeners' Chronicle*, written respectively by Mr. de Barri Crawshay and M. A. Poirier, were reproduced in the pages of the *Orchid Review* (xiv. pp. 193—196 and xv. pp. 5—7), the latter being a reply to the former. Again, under the title of "Habitat of Odontoglossum crispum" M. F. Claes deals with the same subject (*O.R.* xv. pp. 36, 37 and 79, 80). Anyone who had read all those articles carefully would have found himself in somewhat of a quandary, for while M. Poirier disagreed in no half-hearted fashion with Mr. Crawshay, M. Claes did not support M. Poirier. In view of these conflicting statements, therefore, I am very glad to be able to give readers of the *Orchid Review* the benefit of M. Louis Forget's views. M. Forget is too well known as an experienced and successful collector to need any introduction, and he has been in recent years among Odontoglossum crispum. He had read all the matter referred to before I met him recently, when he was in England, and had no hesitation in giving corroborative support to M. Poirier, only he went a step further in simplification.

M. Forget says there is but *one* region for good crispums, and it extends from the Savannah plains northwards right to Simatoea (I have been unable to find this name on my map), where a few O. Pescatorei have already been found mixed with crispum, and in this region *no* O. luteopurpureum grows. And there is but one region for bad crispums—those with "starry" flowers, thousands of which have been imported as good, and this region extends for hundreds of miles southwards from the Savannah, and the plants from here are known as the Fusagasuga type. It is with these that O. luteopurpureum grows.

These two regions are separated by the immense Savannah plains, where one has the impression of being in England. Here agricultural pursuits are being carried on; oats, barley, maize, and potatoes being cultivated in great quantities, and the two latter crops sometimes suffer from frost. In the meadows browse cattle and sheep of the choicest breeds, and at the central top one sees Bogota, and can find here all the desirable comforts of civilisation.

Three railways have their termini at Bogota; one to the Cordillera on the north, taking you to Zipaquira and good crispums, and one to the Cordillera on the South, taking you to Fusagasuga and bad crispums, while the third line goes to Facatativa, thence three days on mules to Honda, where one finds the Magdalena river steamers to Barranquillo, in the Caribbean Sea—and home.

M. Forget takes exception to the introduction of a number of names of insignificant villages as localizing the beginning, the end, or the middle of a particular characteristic in the type, as this can only result in confusing the mind of the reader. Good varieties of crispum extend all along the northern regions, but a collector may obtain a lot of plants better than another, which readily admits of an explanation. Two good varieties get mated together, and their seedlings spread to progenerate. Anyone who has flowered a lot of plants out of the same importation will have all the types present which M. Claes so carefully classifies and localizes—stems slender and stout, flowers arranged closely and regularly, or *vice versâ*, flowers of good and bad shape, thin or of good substance, which proves that it would be absurd to select each of these as typifying the product of a certain hillside. Who is there who has not—if he has been growing crispums long enough—purchased the "true Pacho type"? Did anyone ever flower ten per cent. of good ones out of them—I mean good in arrangement, shape, and texture? And if anyone did flower the ten per cent. of good ones, would it be logic to hold these up and say the "true Pacho type?" It would not. The type would be the ninety per cent. indifferent ones, the ten being the abnormals. It is the abnormals that everyone is hunting after, and they exist, according to M. Forget, in much the same proportion all along this region. Where O. Hunnewellianum is found growing abundantly there is more chance of getting blotched or spotted forms. He estimates that not more than fifty per cent. of the Odontoglossums growing in the Velez and Bolivar districts are true crispums, the other half being the inferior species and hybrids between them and O. crispum, but the natives are excellent judges of the plants they are collecting, and when once they are rebuked for trying to pass off the inferior kinds, they bring the crispums in very pure. In the ranges of Sucre Viego the Odontoglossums seem rather more mixed and intercrossed, and M. Forget says that certainly from that district come most of the fine

blotched varieties. It is not a very far stride from O. × Fascinator to the so-called "spotted crispum."

M. Forget cannot agree with M. Claes in depreciating the crispums from the Velez district, as he does in the last paragraph of the article referred to, where he says "with the exception of a small chain of mountains extending from the Valley of Jesus in the direction of Sabaya, in which the type is regular, the O. crispum round about Bolivar are mostly poor." And now comes the most remarkable of M. Forget's statements, namely that all crispums that have been collected during the last five years have been collected in these districts, and there is no danger of the plants from this Bolivar district being adulterated with the poor Fusagasuga type, as is sometimes the case with those coming from Pacho and Facatativa.

Correct information with regard to the habitat of O. crispum has naturally most value to those who are purchasers, and they must regard with grave suspicion a consignment containing luteopurpureum or its best child, O. × Wilckeanum, but the knowledge may come too late (after flowering), as one must be more than an ordinary expert to pick out luteo-purpureum crosses from an importation of O. crispum when received, for the crispums themselves are probably more varied in the colour, shape and size of their bulbs than any other Orchid.

J. M. BLACK.

CIRRHOPETALUM ROTHSCHILDIANUM.—Flowers of this handsome species are sent by Messrs. A. J. Keeling & Sons, of Bradford. It is allied to C. ornatissimum, and was described and figured in 1895, when it flowered in the collection of the Hon. Walter Rothschild, and received a First-class certificate from the R.H.S. (O'Brien in *Gard. Chron.* 1895, ii. pp. 608, 609, fig. 102). The flowers are large and bright crimson purple in colour, with long tails to the lateral sepals, and numerous appendages on the margins of the dorsal sepal and petals. It is a very striking plant, perhaps more nearly allied to the Burmese C. Collettii than to any other. It is said to have been sent some years ago, with other Orchids, from the hills beyond Darjeeling, and is still rare in cultivation.

CHONDRORHYNCHA CHESTERTONI.—This is not an easy subject to grow, and one has a difficulty in finding the right spot for some of these Orchids with a weak constitution. A shady corner in the Intermediate house often proves a favourable place, where it should be suspended about two feet from the glass, and never be disturbed at the base more than is really necessary. It is then only advisable to wash out the old compost, and replace it with a mixture of peat and sphagnum. — T. ANSTISS, in *Journal of Horticulture*.

EPIDENDRUM WALLISII.

It is pretty generally known that photography does not always give a correct idea of the colour of a flower, in spite of its superior accuracy with respect to drawing, but it is not always realized how great an improvement has been effected by the introduction of isochromatic plates and the yellow

Fig. 36. EPIDENDRUM WALLISII.

screen, hence the annexed photographs of Epidendrum Wallisii may prove interesting. They represent the same flowering shoot, and were taken at the same time, the upper on an isochromatic plate with a yellow screen, the lower on an ordinary plate without a screen. E. Wallisii, as is well known, has yellow sepals and petals, more or less spotted with dark purple, and a

whitish lip with some reddish purple markings. The lower photograph gives one the impression of a flower with dark sepals and petals, and only an obscure trace of spotting, while the upper shows the colours in something like their true relations. The two might represent distinct varieties. This difference is barely perceptible in the lip, because the colours of this organ photograph in about their relative degrees of brightness. It is well known that such relatively bright colours as yellow, orange and scarlet photograph, by the ordinary method, like shades of black, while the relatively darker shades of blue and violet come out nearly white, and flowers showing these colours should not be photographed by the ordinary method. The effect of the isochromatic plate is to increase the luminosity of the shades from yellow to scarlet, while the yellow screen cuts off most of the highly actinic violet rays, and the two may be used together or separately, according to the presence or absence of these colours. Photographs of purple Cattleyas are seldom satisfactory, because they usually come out much too light, while the yellow on the disc is more or less black, and thus the relative brightness of the colours is practically reversed. Again, we have a photograph of the brilliant scarlet Sophronitis grandiflora, but the subject might almost have been a black pansy except for some differences in shape. Many otherwise interesting photographs have been passed over for this very reason, and the point might be borne in mind when flowers that show the colours mentioned are photographed. The photographs reproduced were taken by Mr. F. W. Rolfe from a plant in the Kew collection, and represent the flowers a little below natural size. We believe that it would be possible to select a subject in which the colours were actually reversed by the two methods above described.

Epidendrum Wallisii is a very distinct and attractive species, which was described by Reichenbach in 1875 (*Gard. Chron.* 1875, ii. p. 66), from materials obtained by Gustav Wallis when collecting for Messrs. James Veitch & Sons. Reichenbach referred it to a new section of the genus, which he called Acropleuranthium, on account of its having both a terminal and lateral inflorescence, remarking that only one other species was known, namely E. exasperatum, Rchb. f., a native of Costa Rica. E. Wallisii is a native of the Frontino district of Colombia, on the western Cordillera, at 4,000 to 7,000 feet altitude. Its habit is peculiar, for the axillary racemes are produced in succession as the stem gradually elongates, and strong established plants flower almost continuously, while the stems ultimately reach a height of five feet or more. It is rather variable, in some cases the blackish purple spots on the sepals and petals being small and numerous, in others fewer and larger, while occasionally they are absent, leaving the sepals and petals wholly bright yellow. The lip is white, streaked and stained with purple, while there are three raised orange lines at the base. E. Wallisii

has been successfully hybridised with E. Endresii, E. ciliare and E. pseudepidendrum, yielding the hybrids E. × Endresio-Wallisii. E. × Wallisiociliare, and E. × langleyense. The first-named re-crossed with E. Wallisii yielded E. × elegantulum, which again crossed with E. Wallisii produced E. × Clarissa, in which the species mentioned is represented three times over. Thus we have a very interesting series of hybrids from the subject of our illustration.

CALENDAR OF OPERATIONS FOR NOVEMBER.

By W. P. Bound, Gatton Park, Reigate.

CALANTHES.—The foliage on most of the earlier flowering varieties will by now be fully ripened, and they will need practically no water at all, but if they are staged in a position where much fire heat reaches them, and the soil becomes dry very quickly, I do not think it well to deprive them of water entirely when the foliage has ripened. I believe in many cases the roots continue giving some sustenance to the newly-made bulb for some time after the leaves have fallen, and without doubt so long as there is a live root left a little water will be beneficial, though in some houses it may not be necessary. I speak more respecting the dryer class of house usually chosen to display the flowers of this popular Orchid. Give a neat stake to any spikes that are inclined to hang too much, but we find generally that it is only necessary to stake when several spikes have come from the growth of what was a single bulb at potting time. They are then apt to crowd themselves together if not staked out. These plants, when nicely arranged among ferns and light palms, present a picture during the dull season that every one must admire.

Those that have only made weakly bulbs should not be allowed to flower, and the benefit of having a rest will be readily seen when the plants start next season.

The later-flowering varieties should still be kept watered as long as the foliage remains green, gradually reducing the supply as the foliage ripens.

PHAIO-CALANTHES.—A rather difficult problem presents itself in this case, where the deciduous Calanthes have been joined with the evergreen Phaius, and to meet it at all successfully I find it to be essential to go quite half way in the watering, allowing them to become well dry and remain so for a day before giving water, then the plant will quickly dry again. Everything must be done to see that the plant does not lie wet for any length of time during the winter season. The spikes are now pushing up on some of the forwardest plants, and they should be placed in a very light position in the stove Orchid house. We grow ours in a house where the temperature maintained is similar to that of the Cattleya house, but

we find that if the plants are allowed to develop their spikes there they generally come crippled and disfigured, whereas when taken to a warmer and lighter structure they develop clean and well-formed flowers.

CYMBIDIUM GRANDIFLORUM.—The flower-spikes are now running out well on this grand species, and it should be given a very light position. So far we have never known our buds to fail, and as the plants were from different sources, and not from one stock, I have rightly or wrongly put it down to us having a strong light at Gatton, and taking full advantage of it. It must be very disappointing to fail to flower this magnificient Orchid, yet I believe such failures occur year after year. Taking for granted that the plants now showing spikes are strong and well rooted, and are given a position where all available light can reach them in the Odontoglossum house temperature, I believe that in most cases the spikes will develop fully. I can quite understand the buds falling near large towns from the effect of town fogs. I should be very interested to know of any failures that may occur this winter on plants in good condition, for I believe such points as this may be cleared up if we would only record our failures, giving full particulars of the compost used, temperature of house, &c.

VANDAS AND AËRIDES.—These will now need little direct watering; slight damping between the pots will generally suffice, though sometimes, especially if the house is of a very dry nature, they may become too dry. In that case only give enough to moisten the surface material, for it is rather more a case of keeping the moss alive than of helping the Orchid.

The beautiful Vanda teres should be given a very light position, as we have few plants that resent our short dull days more than these. They always require a position where much light can reach them, and at no time is it more important than during the winter, although they are practically lying dormant.

Exactly contrary to V. teres is V., or Arachnanthe, Cathcartii, which is now developing its spike. I find the most shady and damp positions the most suitable at all seasons; also if the plants can be placed a long way from the glass so much the better. Ours are grown over a tank on the back wall of a lean-to Nepenthes house. To see the flower properly it is necessary to place the plant on a stage in the front of the same house, and we have noticed each year after the plant has been moved from its corner that the leaves soon take on a yellow appearance. Another case I have in my mind respecting this beautiful variety was some plants that had been placed over a tank—I should say many years previous—and had been quite neglected. The plants had fallen over, and were practically growing horizontally below the level of the edge of the tank, and I think I must say they were the best plants of this species I ever saw.

BULBOPHYLLUMS AND CIRRHOPETALUMS.—Among these are perhaps some of the most peculiar, extraordinary, and most weird of all flowers, and it is very pleasing to note how eagerly they are being sought after by our present-day Orchidists. In addition to their wonderful construction, some can claim attention by reason of their beauty, if not of shape certainly in the wonderful colouring. To grow a nice collection would not take up much space, and at any rate a few should be given a place in all collections, where a warm house is available.

In most cases their growth is somewhat slow, yet they must not be classed among the difficult Orchids, providing they are not coddled too much. Such plants want close attention to details, but what plants do not? Their season of growth is practically all the year round, but a beneficial rest may be given them by keeping them rather dryer after their growth is completed till they start away again. At the present time Bulbophyllum virescens, B. Ericssoni, B. grandiflorum, B. Dearei (Godseffianum), and B. Lobbii are all growing freely in the stove Orchid house. Though during the brighter portions of the year these are all shade-loving plants, at this season they will be helped considerably by being placed in a light position.

Cirrhopetalum appendiculatum, C. Medusæ, C. Cumingii, C. refractum, C. retusiusculum, and Bulbophyllum Dayanum are grown in a corner in the Cattleya house. The three first-named are now active, and although they do not need copious supplies of water at this season, they should not be allowed to remain dry for any length of time. The others have their new bulbs developed, and may to advantage be kept on the dry side, but in the cultivation of these the resting time must be given when they are ready for it, irrespective of season.

The most suitable time for potting is when new roots are being emitted. The time of year does not make much difference. I have found a mixture of very fibrous peat and sphagnum in equal parts, very suitable. Being in most cases surface-rooting plants, there is nothing gained by giving much depth of material, and it will be found far better to fill the receptacle half full with drainage. When such varieties as B. virescens or Ericssonii are being done, the back part should be kept right on the side or end of the receptacle, so that the lead will have ample room to develop, and root on to the material forward.

They are easy subjects to propagate. I have found the best results accrue from cutting away the leads with one or two bulbs attached, and thus leave the old plant undisturbed till it has made new leads.

CHONDRORHYNCHA CHESTERTONI.—This beautiful species has in the past been classed with the troublesome sections of Orchids, and it was only very rarely that a healthy plant was seen. No doubt the trouble in the past

arose from the fact that the plants were grown much too hot, and they then soon took on a very sickly appearance. Water was also withheld to a great extent, and thrip soon got master of the situation, and consequently the plant soon ended its career. This trouble all arose in the first place through the plant being placed in a too hot and stuffy house. Here we never allow the plants to become really dry. They are grown in the Cool intermediate house, where much air is given on all favourable occasions. They are potted in a mixture of equal parts of peat and sphagnum, with plenty of small crocks and coarse sand, and potting may be done whenever the plant is throwing up new growths. During the greater part of the year they are kept well sprayed over. When treated thus I do not think they will prove at all difficult to grow, and I think in the near future it will be found in most collections of note.

PESCATOREAS AND ALLIES. — Pescatorea cerina and Klabochorum, with Warscewiczella Wendlandii, Wailesianum, and others of the bulbless allies of *Zygopetalum*, require very similar treatment to the Chondrorhyncha, except that they require a rather warmer situation, such as a corner in the Intermediate house. They have been branded as bad growers, but I see no reason why they should not be successfully grown, providing they are not placed in a hot and stuffy house. They are moisture-loving plants, and during the brighter parts of the year much good will be done by frequent overhead-spraying. At this season this cannot be done much, but they can be aided by keeping the surroundings well charged with moisture, and on a bright morning a spraying overhead will not do any harm. Potting may be done when new growths are starting, using the same compost as given to Chondrorhyncha. I would always advise using ordinary pots, or deep pans without side perforations.

ZYGOPETALUM ROSTRATUM.—This beautiful and now somewhat rare species is grown with those previously mentioned, and treated much in the same way, with the one exception that we keep them rather drier after the flowering period is over, and the new bulb is completed, till the new growths start away again.

PROMENÆA XANTHINA AND STAPELIOIDES.—These are two beautiful though small varieties, which are now fast finishing up their new bulbs. When full development has been obtained, the supply of water should be reduced until they start away into growth again, but on no account allow them to suffer for want of water. They grow very well suspended in the Cool intermediate house, and when in active growth they need much water. Shallow, well-drained pans are the best receptacles, using the same compost as for the foregoing species. The best season for renovating the surface or potting is just when the new growths are nicely away.

TREATMENT OF HOUSES DURING FOGS.—Those of us who are

fortunate enough to live out of the reach of the extremely detrimental town fogs, can hardly realize how much we have to be thankful for. From time to time fogs do occur in country districts, dense enough to ruin buds and flowers, but this is the exception rather than the rule. In most cases if the interiors are kept as dry as possible, reducing the bottom air to a minimum, and likewise reducing the pipe heat, and refraining from watering till the fog lifts, little harm will accrue. I prefer leaving a crack of air on the bottom ventilator to shutting them entirely. The one point to be most closely followed is to see that the pipe heat is kept well in hand. In the vicinity of towns where much smoke is in the atmosphere, when a fog is seen coming on every precaution should at once be taken to prevent the fog from entering the houses more than possible, by closing all ventilators, and not opening any outside doors more than is absolutely necessary. No watering should be done, and all floors and staging should be kept quite dry. With the interiors well dry, the plants can be better treated, as they will not hurt so much when deprived of all fresh air. It will also be very necessary to keep the heating arrangements well in hand, especially after the houses and plants have become fairly dry.

CATTLEYA LABIATA.

THE beautiful Cattleya labiata will shortly be in flower again, and it may be interesting to reproduce some important information respecting its habitat, given in an article by M. Louis Forget, entitled "Erreurs géographiques concernant les Orchidées," which appeared in 1897 (*Le Jard.* 1897, pp. 246—248), and which I had overlooked until recently. It has an important bearing on the existing records, which I have already summarised (*O.R.* i. pp. 329—332; viii. pp. 362—365). Alluding to the absence of a clue to its exact habitat, M. Forget remarks that it is fair to suppose that Swainson explored the provinces of the north of Brazil, because this plant was never indigenous in the province of Rio de Janeiro, and still less of the Organ Mountains, which have been quite wrongly indicated as its habitat. As to the plant which Gardner found on the Gavea, near Rio, in 1836, he says that it is much more probable that Gardner mistook for Cattleya labiata—which alone was known and described at this period—the Lælia lobata, which still exists in this locality in numerous examples. Gardner's dried specimens, fortunately, still exist, though the flowers are not well preserved. On soaking one out and examining it in detail I find that M. Forget's suggestion is right, for the segments, though not perfect, match those of the Lælia, and not of the Cattleya. The pollinia are not present. This gets rid of the whole of the argument based upon Gardner's record and specimens, so far as this particular locality is concerned.

Gardner also recorded finding Cattleya labiata at Sapucaya, on the

banks of the Rio Parahyba, separating the provinces of Rio de Janeiro and Minas Geraes. M. Forget remarks that here it was Cattleya Warneri which confused Gardner. Its habitat extends over a vast space, from the northern part of the province of Rio de Janeiro to the north-west of the province of Minas, Espiritu Santo and the south of Bahia. Gardner did not preserve specimens from this locality, but there can now be no doubt that M. Forget is right in his conclusions.

Concerning the range of Cattleya labiata, M. Forget remarks that it grows spontaneously in the mountains of the interior, in the state of Pernambuco and in the neighbouring provinces, to the north Parahyba, and to the south Allagoas. It is difficult to realise the conditions under which it grows. During the rainy season, which is of three months' duration, the vegetation grows with incredible rapidity, after which, owing to the torrid heat, the leaves fall from the trees, giving the region the aspect of winter in Europe. The stranger would never dream that Cattleya labiata or its allies could exist there. But towards the summits of the mountains one discovers here and there ravines and gorges where the virgin forest still persists. It is here that the plant is found, growing on the large trees, whose trunks are garnished with Aroids, Begonias, ferns. &c. The Cattleya grows chiefly on the lateral branches of the trees, in company with other Orchids, Bromeliads, and Lichens, its roots enveloping the branches to a length of nearly six feet, with their tips intact, and finding in the air the ingredients necessary for their existence. Here, in the shade of the evergreen foliage and in the breezy mountain air, the Cattleya luxuriates. It never grows on dead trees, because the bark quickly perishes and falls off.

In these localities the plant flowers from January to March, more or less regularly, according to the epoch of the passing of the *trovoadas*—storms which blow from November to January, and seem to announce the approach of the rains, and the revival of the vegetation. It is under this influence that C. labiata develops and expands its flowers. During the rainy season, from April to June, under the action of this constantly humid but healthy atmosphere—because of the altitude and the constantly moving air—the new growths and roots are produced. After growth is completed, the plant then rests until the epoch of the storms again arrives. Thus we see that its peculiar habit of resting after growth has a quite natural reason.

As to culture, M. Forget recommends cultivators to encourage the development and especially the preservation of the roots.

With our present knowledge it is remarkable that such a well known and esteemed species should ever have been lost sight of, as many plants were sent home after its discovery, but probably the way it was soon confused with two other species was one of the causes.

R. A. ROLFE.

CYCNOCHES EGERTONIANUM.

FEW Orchids can boast of such a remarkable history as the one represented in the annexed figure, which is a photographic reproduction of the original plate of Cycnoches Egertonianum (*Batem. Orch. Mex. et Guat.* t. 40). It

Fig. 37. CYCNOCHES EGERTONIANUM.

was described by Mr. Bateman as follows:—"Among Mr. Skinner's earliest Guatemala collections attention was particularly directed to the specimens of a plant, which to the habit of a Cycnoches joined the long pendulous spikes of a Gongora, and for the possession of which, in a living

state, no small anxiety was entertained. Some plants were speedily transmitted by Mr. Skinner, but these, on flowering, proved to be merely the old C. ventricosum. A mistake was of course suspected, and Mr. Skinner being again applied to sent over a fresh supply of plants, for the authenticity of which he vouched, but these were scarcely settled in the stove when flowers of C. ventricosum were again produced. Mr. Skinner being importuned for the third time, and being then on the point of returning to this country, determined to take one of the plants under his special protection during the voyage, which, flowering on the passage, seemed to preclude the possibility of further confusion or disappointment. The specimens produced at sea were exhibited, and the plant itself placed in the stove at Knypersley, where it commenced growing with the utmost vigour. The season of flowering soon arrived, but brought with it a recurrence of the former scene of astonishment and vexation, for the blossoms, instead of those of the coveted novelty were not distinguishable from the old C. ventricosum. They were still hanging to the stem when the inexplicable plant sent forth a spike of a totally different character, and which was, in fact, precisely similar to the specimens gathered in Guatemala, and to those produced on the voyage. It is, at present, impossible to attempt any explanation of so strange a phenomenon, especially on the supposition that the two forms of flower are analagous to the male and female blossoms of other tribes, for C. ventricosum alone not infrequently perfects seeds. The species (if as such it may be regarded) was named in honour of Sir Philip Egerton, before any of its eccentricities had been discovered, otherwise the compliment might have been deemed a dubious one."

The plate was intended as a presentment of the phenomenon in question, and to make the figure overleaf more intelligible it should be added that the two large flowers shown are green and the smaller ones purple. The work appeared in 1842, and in September of the following year Lindley received from R. S. Holford, Esq., of Westonbirt, near Tetbury, what he termed "Cycnoches ventricosum and C. Egertonianum on the same raceme." It was exhibited at a meeting of the Horticultural Society, and was afterwards figured (*Bot. Reg.* 1843, Misc. pp. 75, 77). The raceme bore five flowers, one being green, two purple, and the other two mottled with green and purple.

Neither Bateman nor Lindley could understand these "freaks," and when C. ventricosum itself was observed to "sport" into something else, it only added to the mystery. The species appears to have been soon afterwards lost to cultivation—at all events the phenomenon did not recur—and as the original specimens were not preserved, the matter seemed inexplicable.

In the autumn of 1897 a living plant of some Cycnoches was sent to

Kew by Mr. Richard Pfau, from Costa Rica, and this was made into two by the removal of a young growth that appeared at the top of an old pseudobulb. In the following April one of the plants produced a pendulous raceme of purple flowers, identical with those figured by Bateman, and in June the other produced a green flower, not, however, identical with the green one figured by Bateman. These were clearly the male and female flowers of the same species—for the sexual difference between the two kinds of flowers produced by two or three other species was by this time understood —and it became obvious that there was some error in Bateman's figure, which showed two kinds of male flowers.

A suspicion now arose of some error in the drawing of the green flowers, and as they were "still hanging to the stem" when the purple flowers afterwards appeared, I came to the conclusion that the artist had restored them by the help of some drawing of C. ventricosum, which indeed had been figured at plate 5 of the same work, the plant showing both male flowers and a seed capsule. I then wrote to Mr. Bateman, asking him whether he could confirm my suspicion. His reply was interesting, and he thought the suggestion was right, though he could not remember exactly how the drawing was made. Speaking of plate 5, he remarked: "The pseudobulb which carried the capsule was all that came in the box, which I *unpacked myself* in the West India Docks early in June, 1836. I sent it down to Knypersley at once—my Orchid houses were furnaces then—and in the autumn it flowered as represented. No more plants of C. ventricosum were received until two years later, and then came as what ought to have been C. Egertonianum. And now we will pass on to plate 40, where both the mysterious racemes are shown as proceeding from the same pseudobulb, though, as you rightly remark, 'it is clear that they were not borne simultaneously.' But they followed each other after a short respite—I believe, in about three weeks—and I can positively assure you that they were watched as carefully as the Koh-i-noor itself. Never a day passed without my inspecting them. As to the withered flowers, they remained many months on the plant, and were seen by many people, including Sir P. Egerton, after whom the species was called."

It is unfortunate that the flowers were not preserved, for they would certainly have cleared up the mystery. It is, however, evident that the purple and green flowers produced at Kew are, respectively, the male and female of C. Egertonianum, the latter being identical with those produced at Knypersley over half a century earlier. Lindley's figure of the one that flowered at Westonbirt represents the two sexes of the same species on a single raceme, and here the female is accurately represented, but it is not C. ventricosum, though considered to be such by Lindley. The two species when not in flower are sufficiently alike to be confused together, and I think

that the plants of C. ventricosum, which "ought to have been C. Egertonianum," were really the former, as Bateman states. It is somewhat curious that on the third occasion he only speaks of the green flowers as "not distinguishable from the old C. ventricosum." They are certainly so represented, but all female Cycnoches have a short stout column, like the one figured by Lindley, and it is rather curious that this was not noticed in what was evidently the female of C. Egertonianum. It is in this character that the drawing is chiefly erroneous, for in the shape and colour of the perianth the male of C. ventricosum is much more like the female of C. Egertonianum than is the male of its own species. The green flower was evidently believed to be C. ventricosum, and there is no mention of its having a short column, but if it was restored from a "withered" flower by the help of a drawing the point might be overlooked, or the short column be considered abnormal. It is a curious case of confusion, and for a long time almost as inexplicable as was Darwin's supposed three sexes of Catasetum. R. A. ROLFE.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING was held at the Royal Horticultural Hall, Vincent Square, Westminster, on October 1st, when there was a fine display of Orchids, and the Awards consisted of six Medals, two Awards of Merit, and one Botanical Certificate.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), staged a choice group, which gained a Silver Flora Medal. It contained the beautiful Cattleya × amabilis var. illustris (labiata × Warscewiczii), fairly intermediate in character, with two yellow eyes in the throat of the lip, C. × Iris, C. × Mrs. Pitt, C. × Adula Colmaniæ, Lælio-cattleya Phryne, L.-c. Nysa, and other interesting hybrids, also the new Cirrhopetalum Fascinator, an ally of C. appendiculatum, having a much larger flower.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), also received a Silver Flora Medal for a fine group, including the handsome Cattleya × Chamberlainiana magnifica, C. × porphyrophlebia, C. × Goossensiana, C. bicolor, Lælia × Stella, Brassocattleya Groganiæ, B.-c. Queen Alexandra, Odontoglossum Harryanum, Cypripedium tonsum, C. × H. S. Goodson, C. × Chapmanii magnificum, C. × Maynardii, several C. Fairrieanum, and other good things.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), showed a fine Cattleya × Prince Edward (Warscewiczii × Schilleriana), bearing a spike of seven flowers, Cymbidium erythrostylum with a spike of twelve flowers, and the distinct and striking Catasetum laminatum, the latter receiving a Botanical Certificate.

Col. Brymer, Ilsington House, Dorchester (gr. Mr. Powell), showed three plants of Lælio-cattleya Powellii (C. × Brymeriana × L. xanthina), having pretty cream-white sepals and petals, and the front of the lip purple.

Major Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), sent Brassocattleya Rowena rubella, a pretty variety having the yellow sepals and petals veined with light rose, and the front of the lip reddish-mauve, Lælio-cattleya Lustre (C. Lueddemanniana × L.-c. callistoglossa), a fine, richly-coloured hybrid, and Cypripedium × Dante (Charlesworthii × Euryades), having lines of rosy spots on the broad white dorsal sepal.

G. W. Jessop, Esq., Rawdon, Leeds (gr. Mr. W. Wilkinson), sent a good example of the remarkable Bulbophyllum grandiflorum.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent Cattleya × Iris Warnham Court var., bearing five fine flowers.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Lælio-cattleya Lady Leese (L.-c. callistoglossa × L. xanthina), having whitish yellow sepals and petals, the front of the lip purple, and the throat orange-coloured, with some reddish lines at the base.

Messrs. Armstrong and Brown, Tunbridge Wells, staged a very fine group, to which a Silver Flora Medal was given. It contained a beautiful series of 45 Cattleya × Iris, raised in this establishment from C. bicolor × Dowiana aurea and the reverse cross, and showing great variation, C. × fulvescens, C. × Lord Rothschild, C. × Armstrongiæ (Loddigesii × Hardyana), a very beautiful hybrid, Lælio-cattleya George Woodhams (C. × Hardyana × L. purpurata), Dendrobium Phalænopsis, Cypripedium × Maudiæ, C. × Kimballiana and others.

Messrs. Charlesworth & Co., Heaton, Bradford, also received a Silver Flora Medal for a very fine group, containing some well-flowered Vanda Kimballiana and Odontoglossum grande, O. crispum Queen Maude, some fine examples of O. × amabile and O. × Rolfeæ, Bulbophyllum grandiflorum, B. Dearei, Rodriguezia fragrans, the curiously twisted Schombocattleya spiralis, Sophrolælia Gratrixiæ, Brassocattleya Queen Alexandra, some beautiful forms of Cattleya × Chamberlainiana, C. × Mrs. J. W. Whiteley, C. × John Baguley, and other fine things.

Messrs. James Cypher & Sons, Cheltenham, received a Silver Flora Medal for a very interesting group containing over a hundred plants of the beautiful Cypripedium Fairrieanum, with C. × Arthurianum, C. × Leeanum var. Corona, C. × Milo Westonbirt var., C. × Niobe, C. insigne "The Queen," a good Cattleya × Wendlandiana, C. × Mantinii nobilior, C × Iris, Lælio-cattleya Clive, Oncidium Papilio, and a nice batch of Dendrobium Phalænopsis.

Messrs. Hugh Low & Co., Enfield, also received a Silver Flora Medal for a showy group, containing a good example of Stanhopea oculata, a

beautiful Cattleya Gaskelliana with four flowers, C. × Mrs. Pitt, some good C. × Iris, Lælio-cattleya elegans, Phalænopsis Esmeralda, Houlletia Brocklehurstiana, some good Dendrobium Phalænopsis, Warscewiczella Wailesiana and veleta, Oncidium oblongatum and microchilum, Stelis muscifera, Cypripedium Charlesworthii rubrum, a remarkably large and richly-coloured form, and other interesting things.

Messrs. Sander & Sons, St. Albans, staged a small group of choice things, including several fine forms of Cypripedium Fairrieanum, the rare Eulophia guineensis, Cattleya × Lord Rothschild, the beautiful Cymbidium erythrostylum, Lælio-cattleya Endymion var. amabilis, and L.-c. The Duchess (C. × Hardyana × L.-c. Hippolyta), the latter a very fine hybrid, which received an Award of Merit. It had light orange-coloured sepals and petals tinged with rose, and a crisped ruby-purple lip.

Messrs. J. & A. A. McBean, Cooksbridge, received an Award of Merit for Odontoglossum Pescatorei ornatum, a very large form, having the lip very heavily blotched with deep purple.

Messrs. William Bull & Sons, Chelsea, staged a number of good Orchids in a group of foliage plants.

M. Mertens, Ghent, showed Miltonia × Bleuana, M. vexillaria Leopoldi, a beautiful example of Dendrobium regium, Cattleya Dowiana aurea, and some hybrid Odontoglossums.

Messrs. James Veitch & Sons, Chelsea, showed a beautiful form of Cattleya × Davisii (velutina × Hardyana), having buff-coloured sepals and petals, and a yellow lip, beautifully veined with rosy crimson, and the disc orange.

A second meeting was held on October 15th, and again produced a very fine display, the awards consisting of nine Medals, two First-class Certificates, and three Awards of Merit.

Leopold de Rothschild, Esq., Gunnersbury House, Acton (gr. Mr. Hudson), staged a group of well-grown Orchids, which gained a Silver Flora Medal. At the back were fine examples of Cattleya Bowringiana and its hybrids, and in front some good C. labiata, with plants of Vanda cœrulea, Oncidium varicosum, Dendrobium formosum, and Odontoglossum grande at one end.

J. G. Fowler, Esq., S. Woodford (gr. Mr. Davis), received a First-class Certificate for the handsome Arachnanthe Rohaniana, like A. Lowii in its inflorescence, but said to show some difference in habit.

Major G. L. Holford, Westonbirt (gr. Mr. Alexander), received a First-class Certificate for Cattleya × Hardyana Westonbirt var., a superb form raised in the collection, having white sepals and petals veined and tinged with bright rose, and the lip rich ruby crimson veined with yellow on the disc.

N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), received a Silver Banksian Medal for a choice little group, containing a fine Odontoglossum crispum punctatissimum, bearing two spikes of 14 and 19 flowers, Lælia × De Geestiana, Cypripedium × Dom Carlos Rex, a fine white flower blotched with purple, C. × Io-Argus, C. × Chapmanii, Oakwood var., and C. × Nandii Low's var. (callosum × Tautzianum), the latter a beautiful white flower delicately tinged with rose, which gained an Award of Merit.

J. Bradshaw, Esq., Southgate (gr. Mr. Whitelegge), received an Award of Merit for Cattleya labiata Daphne, a beautiful white form with a small violet blotch in front of the yellow disc of the lip.

J. F. Alcock, Esq., Northchurch, sent a seedling from Cypripedium Harrisianum and C. Charlesworthii, having some rosy veining on both the lower and upper sepals.

H. J. Bromilow, Esq., Rainhill, Lanc., sent Cypripedium × Actæus revolutum and C. insigne Rann Lea var.

G. W. Jessop, Esq., Rawdon, sent Cirrhopetalum appendiculatum.

H. Little, Esq., Twickenham (gr. Mr. Howard), sent Cypripedium × Winifred Little, a pretty yellow flower with a purple line on the dorsal sepal and petals.

The Earl of Onslow, Guildford (gr. Mr. Blake), sent a spike of Cattleya labiata with six flowers.

Messrs. Charlesworth & Co., Heaton, received a Silver Flora Medal for a brilliant group, containing Lælio-cattleya Lusitania (C. × Iris × L.-c. Phyrne), L.-c. Aureole (L.-c. luminosa × C. Iris), and numerous well-known kinds, some good Cattleya labiata and various hybrids, various fine Odontoglossums, Cycnoches Egertonianum with a raceme of its purple male flowers, Cirrhopetalum ornatissimum, Maxillaria nigrescens, the fine Dendrobium regium, Bifrenia aureofulva, &c.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a fine group, including some very fine Cattleya labiata and other Cattleyas, some good Cypripedium insigne and various hybrids, Cymbidium erythrostylum, C. lancifolium, Catasetum macrocarpum, and various other showy things.

Messrs. James Veitch & Sons, Chelsea, also received a Silver Flora Medal for a fine group of Cattleyas, Lælio-cattleyas, Odontoglossums, including a beautiful example of O. grande with twenty-four flowers, Masdevallia Veitchiana grandiflora, M. × Acis, M. × Imogen, Cypripedium × H. Ballantine, C. × Little Gem, C. × Baron Schröder, C. × J. H. Veitch, and other good things.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a showy group of Cattleyas, Læliocattleyas, Cypripediums, and others.

Messrs. J. and A. A. McBean, Cooksbridge, received a Silver Banksian Medal for a fine group, including some good Odontoglossum crispum and Pescatorei, Miltonias, Cypripedium × alportense, Gratrix's var. (insigne Harefield Hall var. × Boxallii), a noble form, C. insigne Sanderæ with six flowers and others.

Messrs. J. W. Moore, Rawdon, received a Silver Banksian Medal for a good group of Cypripedes, Odontoglossums, Cattleyas, Brassocattleya Madame Hye, Nanodes Medusæ, Oncidium bicallosum, Cypripedium Fairrieanum, Lælia majalis, &c.

Messrs. Stanley & Co., Southgate, also received a Silver Banksian Medal for a showy group of Cattleya labiata, Oncidium varicosum, Cypripedium × nigratum (Swinburnei × Argus), and others.

Messrs. Armstrong & Brown, Tunbridge Wells, sent the rare Bulbophyllum Dayanum with four of its deeply-fringed flowers, and Cattleya × Armstrongiæ magnifica (Loddigesii violacea × Hardyana), a remarkably fine form, having magenta-rose flowers, and some deep orange-yellow on the lip, the latter gaining an Award of Merit.

Messrs. J. Cypher & Sons, Cheltenham, sent a small group including a selection of Cypripedium Fairrieanum, with various others, a fine pan of Zygopetalum rostratum, Cattleya labiata, &c.

Messrs. Linden, Brussels, sent Odontoglossum crispum Madame Linden secundum, heavily blotched with claret-red, and O. c. Rev. d' Or, blotched with yellowish brown.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

AT the meeting held on October 3rd there was a good roomful of plants, and many very good things were exhibited. Committee present :—E. Ashworth, Esq. (Chairman), and Messrs. J. Cypher, F. W. Ashton, Z. A. Ward, F. K. Sander, A. J. Keeling, W. Stevens, J. Cowan, and J. Walmesley.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), showed a nice group, which gained a Bronze Medal. Cattleya × Iris Hey House var. was given an Award of Merit, also a good Cypripedium × Shillianum, one of four plants exhibited. Other good things included in the group were several plants of C. Fairrieanum, Lælio-cattleya Henry Greenwood, and a rather pretty Cattleya granulosa.

William Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), staged a very pretty group, which received a Bronze Medal. It was composed mainly of Cypripediums, among which I noticed C. × triumphans, C. × Maudiæ, and a few C. Fairrieanum. C. × waltonense gained a F.C.C., and C. × Lord Derby had a F.C.C. confirmed. Four well-flowered plants of Oncidium incurvum album produced a very graceful effect, and the largest plant was also awarded a F.C.C.

Dr. Hodgkinson, The Grange, Wilmslow (gr. Mr. Woore), sent a good plant of Dendrobium Lowii, which was awarded a F.C.C.

Wm. Bolton, Esq., Wilderspool (gr. Mr. Cain), gained a Bronze Medal for a group in which a plant of Cattleya × Hardyana rubescens received an A.M.; also a fine Cypripedium × Boadicea var. magnificum. I also noticed a very fine C. × Leeanum Corona, a good C. Charlesworthii, C. × Woltoni Rubens, and plants of Odontoglossum Harryanum.

E. Rogerson, Esq., Oakdene, West Didsbury (gr. Mr. Price), received a Vote of Thanks for a small group of good things. Cypripedium × Rene (Sallieri Hyeanum × Harrisianum) gained an A.M., as did C. × Memnon magnificum and C. × Olga Bagshawe magnificum Oakdene var. There were also plants of C. × Leoniæ, C. × triumphans, and Cattleya × Iris.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), gained an A.M. for the rare Dendrobium macrophyllum.

J. H. Bromilow, Esq., Rann Lea, Rainhill (gr. Mr. Morgan) showed the fine Cypripedium × Actæus revolutum, which was given an A.M.

Messrs. Cypher, Cheltenham, staged the best group and gained the Society's Silver Medal. Conspicuous in it was the fine Dendrobium regium (F.C.) and about fifty plants of the now fairly common Cypripedium Fairrieanum. There is considerable variation in this Cypripedium, but not sufficient for varietal names as in C. insigne. I noticed also a good C. × Milo Westonbirt var., C. × Niobe superbum, C. × Maudiæ in good form, C. × Tityus, C. × Arthurianum pulchellum, a nice Lælio-cattleya Clive, and several well-flowered plants of Dendrobium Phalænopsis.

Messrs. A. J. Keeling and Sons, Westgate Hill, Bradford, gained a Bronze Medal for an effective little group, including three well-flowered plants of Rodriguezia candida, and several Masdevallia torta. Miltonia Bluntii Keelings's var. was given an A.M.

Messrs. Hugh Low and Co., Enfield, staged a good plant of Cypripedium Leeanum Corona.

Messrs. Robson, Altrincham, showed Cypripedium × Robsonæ.

At the meeting held on October 17th there was a magnificent show of Orchids, the room being completely filled. Committee present: Messrs. E. Ashworth (Chairman), Ward, Cowan, Duckworth, Warburton, Shill, Stevens, Keeling, Ashton, R. Ashworth, J. Cypher, Parker, Walmsley, P. Smith and H. H. Smith.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), staged a fine lot of plants divided into three groups for the different Cup Competitions, and was awarded two Silver Medals and a Bronze Medal.

A fine plant of Cattleya labiata ardentissima received a Cultural Certificate, and C. labiata var. Empress a F.C.C. C. × fulvescens, Vine House var., and C. × Pittiana, Low's var., each received an A.M., while a similar award was given to Cypripedium × bingleyense a fine flower of dark crimson brown colour. The group was made effective by good sprays of Odontoglossum crispum and a fine Vanda cœrulea.

J. H. Craven, Esq., The Beeches, Keighley (gr. Mr. Cowley), set up a nice group, composed chiefly of yellow Cypripedium insigne. A fine plant of C. × keighleyense (nitens Ball's var. × Arthurianum), having the dorsal sepal densely spotted, almost running into lines, and C. × Niobe Westonbirt var. each gained a F.C.C., while C. × Rene and C. × Maudiæ, had their previous awards confirmed. C. × Arthurianum pulchellum Charlesworth's var. gained an A.M. I also noticed a good plant of C. insigne Cobbianum.

E. Rogerson, Esq., West Didsbury (gr. Mr. Price), showed the beautiful and rare Cattleya × Hardyana Countess of Derby, a beautiful pale cream flower with a rich crimson lip and delicately veined with gold in the throat. Nearly as handsome was C. × Fabia, a rich rosy-purple flower with a lip of deeper tint. Both plants were awarded a F.C.C., and an A.M. went to Cypripedium × Actæus revolutum.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), was awarded a Silver and Bronze Medal for an effective group, including a nice batch of Cypripedium Fairrieanum, C. insigne Harefield Hall var., C. i. Sanderæ, and several plants of the showy Odontoglossum grande. A F.C.C. to Cypripedium × Shillianum was confirmed.

J. H. Bromilow, Esq., Rann Lea, Rainhill (gr. Mr. Morgan), staged a group of about a dozen good Cypripediums, the Committee confirming a F.C.C. to C. × Maudiæ magnificum, C. insigne Harefield Hall var. and C. insigne Chantini Lindeni. C. × bingleyense was very good, with dark chocolate red dorsal, but the shape left something to be desired. The group gained a Silver Medal.

William Bolton, Esq., Wilderspool (gr. Mr. Cain), received an Award of Merit for Cypripedium × Wottoni rubens (bellatulum × callosum). He also showed a very fine C. × Maudiæ, Cattleya Dowiana aurea and C. × Mrs. Pitt, Miltoni × Binoti, and half-a-dozen well-flowered Oncidium ornithorhynchum, the group receiving a Silver Medal.

Messrs. Charlesworth, Heaton, Bradford, showed two very fine Cattleya labiata, named respectively "The Sultan" and "The Emperor," each of which gained an A.M., a well-flowered plant of Rodiguezia fragrans, Cymbidium Huttoni, Dendrobium regium and a seedling Lælio-cattleya Lusitania (C. Iris × L.-c. Phryne), flowering at 3½ years old. The

sepals and petals were creamy white with slatey blue lip. The group also contained many Cypripediums, Cattleyas, and Vanda Kimballiana and received a Silver Medal.

Messrs. Cypher & Sons, Cheltenham, received a Silver Medal for a mixed group. Cattleya × Portia gigantea was very fine, as also was Brasso-cattleya Hardyano-Digbyana and B.-c. gigas-Digbyana. Many other fine things were included in the group.

Messrs. Moore & Co., Rawdon, Leeds, showed Cattleya Schroderæ var. Distinction, having sepals and petals pale mauve, with a yellow stripe running down the former. Several miscellaneous plants completed a group for which they gained a Bronze Medal.

Messrs. A. J. Keeling and Sons, Bradford, staged a nice group, in which was the rare Cirrhopetalum ornatissimum with two spikes (A.M.)

Messrs. Linden & Co., Brussels, showed a home-raised seedling Odontoglossum crispum var. Reve d'Or, of good shape and well blotched (A.M).

Messrs. Hugh Low & Co., Enfield, received a Vote of Thanks for an interesting exhibit.

H. T.

ORCHIDS AT OAKDENE.

THOUGH not a very large collection, the Orchids at Oakdene, Didsbury, near Manchester, the residence of Ed. Rogerson, Esq., will compare very favourably, for rarity, quality and value, with many more pretentious collections. Four years ago, when I visited the place, I was not much struck with the well-being of the plants, for the foliage, particularly of the Cattleyas and Cypripediums, looked sickly and unhealthy. Being in the neighbourhood the other day, I again called in, and the alteration in this respect was most marked, as under the care and skill of the new gardener, Mr. Price, the plants and foliage not only look more robust, but have taken on that deep shade of green which is dear to the heart of every cultivator of these beautiful plants. I believe that two or three seasons ago Mr. Rogerson was seriously thinking of giving up the cultivation of Orchids, but Mr. Price has managed to infuse new hope, and the visible results certainly justify the hope, and latterly Mr. Rogerson has added many choice plants and varieties to his already valuable collection.

Entering first the Cypripedium house, I found two men busily cleaning the pots, as Mr. Price believes that cleanliness, particularly in the winter months, is essential to good cultivation. A fine plant of the rare and beautiful Cypripedium × Priam, with two good flowers, at once took the eye, and another plant—a piece divided from the original—was growing strongly. Six good plants of C. × triumphans, several showing for flower, I also noticed—indeed every plant seemed of the first quality. C. × aureum

Surprise, and C. × Kubele I noticed in grand form. There were four plants of C. × Minos Youngii, several of the fine C. × Niobe Westonbirt var., and C. insigne Godseffianum, carrying a good bloom, while a plant of the rare C. Lawrenceanum Gratrixianum was growing well.

Mr. Rogerson and his gardener are anxiously looking forward to the flowering of two strong seedlings from the seed pod which produced the beautiful C. × Priam. These seedlings must be at least ten to twelve years old. The fine C. × Actæus var. revolutum was carrying a fine flower. I noticed several strong plants of C. × Mary Beatrice, and C. × Para (bellatulum × Charlesworthii) were nearly open, also four plants of the chaste and beautiful C. × Princess, in my opinion the most beautiful of all the Fairrieanum hybrids. C. × Sir Redvers Buller was in bloom, and I also noticed fine pieces of C. × Germaine Opoix, C. × King Edward VII., a fine piece of the rare C. × Chorltoni, C. × Tityus superbum, C. insigne Amesianum, C. × Massaianum Pitt's var., and many others of equal merit.

In the Cattleya × Hardyana "Countess of Derby" Mr. Rogerson has a treasure, and I was fortunate to see it in flower. Hung up on the roof I noticed two fine plants of C. × Hardyana alba showing their buds, and Mr. Price pointed out to me that the numerous Cattleyas so hung were the albinos of different species—C. Mendelii alba Mrs. A. Lees, C. aurea Imschootiana in flower, and at least a dozen C. Trianæ albinos, including the "Crookleigh" var. I noticed a nice plant of a Lælio-cattleya from L. præstans × C. × Hardyana, fairly intermediate in character, and with an intense dark crimson lip. In this house Mr. Price has a nice batch of Cypripediums propagated from all the best varieties, including five good pieces of C. × William Lloyd.

Mr. Rogerson does not grow many Dendrobiums, but has several strong plants of D. × Dalhou-nobile, and a good plant of D. nobile "Queen Victoria," while D. Phalænopsis album was in flower. Here I had pointed out to me a plant of Cattleya amethystoglossa var. Sanderæ as being very difficult to grow, but Mr. Price has got it well on the move and it should flower shortly.

In the Odontoglossum house Mr. Rogerson has contrived to collect a very valuable lot of these beautiful plants. O. crispum Oakdene Surprise, with ten flowers, was very striking, the shape and texture being excellent, though the blotching is not quite so dark as could be desired. Here was pointed out to me plants of O. crispum Rossendale, O. c. Ed. Rogerson, O. c. Karthausii, O. c. virginale Edward VII., O. c. Oliver Ashworth, and two plants of the beautiful O. c. Lælia Sander, a painting of which shows it to be quite in the first rank of blotched crispums. There were also the varieties punctato-violaceum, H. Low, Stanley Rogerson, xanthotes Charlesworth's var., Ladas, showing a good spike, xanthotes var. Edward

VII. and White's var., four plants of Cooksonianum. Britannia, Duke of Connaught, Ed. Roehrs, very beautiful and greatly improved since first acquired, Alpha, five plants of Luciani, a strong plant of Mrs. Peters with two good leads, Mrs. Rogerson, Perfection, Mabel Whateley, Lindenii, and many other beautiful blotched forms which Mr. Rogerson has purchased unnamed at different times, and which will not be allowed to flower until grown into strong plants.

Altogether Mr. Rogerson must be complimented on the taste with which he has formed his collection, and the improvement the plants are showing under the care and skill of Mr. Price, and though I had not seen nearly all, the darkness of a rapidly closing-in evening drove me away.

H. THORP.

ORCHIDS FROM WESTONBIRT.

SEVERAL very beautiful flowers are sent from the collection of Major G. L. Holford, Westonbirt, Tetbury, by Mr. Alexander, who remarks that they are cut from plants exhibited in the group to which a Gold Medal was awarded on October 29th. Cattleya × fulvescens Westonbirt var., which gained a First-class Certificate, is a remarkable form, and the combination of C. Dowiana aurea with C. Forbesii has produced a lip which, as Mr. Alexander points out, recalls some hybrids of Phaius tuberculosus, being broad, strongly undulate, and remarkably veined and mottled with crimson and brown on an orange yellow ground. The flower is very large, of excellent shape, and the sepals and petals broad and of a peculiar shade of buff yellow. It is the only one like it out of a batch of seedlings, standing alone in size, shape, and colouring, and Mr. Alexander considers it one of the finest and most distinct Cattleya hybrids yet raised. Two others which received First-class Certificates are C. labiata alba Purity, a chaste beauty, having the petals over $2\frac{1}{2}$ inches broad, and C. × Fabia gigantea a very large and richly-coloured variety, the lip being over $2\frac{3}{4}$ inches broad. C. × Fabia gloriosa is remarkably rich in colour, the sepals and petals being very dark purple, and the lip is deep velvety crimson in front, with deep orange veining in the throat—one of the best combinations between C. labiata and C. Dowiana aurea. All the three preceding carried four flowers on the inflorescence. Cattleya × Cleopatra (superba × Dowiana aurea) is another great beauty, like an enlarged C. superba, with a very broad open lip, regularly lined with yellow in the throat and on the base of the front lobe, the lines terminating quite abruptly in front, the rest of the front lobe being dark purple-crimson in colour. The spike bore seven flowers, producing a very imposing effect. Sophrocattleya Nydia is difficult to describe, the colour being between scarlet and brick-red, with some brown dots on the sepals and petals, and some yellow in the throat of the

lip. Lastly comes a fine flower of Sophrocattleya Chamberlainii, a rich rose-purple flower, with clear yellow lip, except the apex of the front lobe, which is purple-crimson. The flowers form a very beautiful series, and are excellent examples of good culture.

ORCHID COLLECTING IN MEXICO.

WHILE spending some days not long since in the city of Vera Cruz, and having a little time at my disposal, I made a short trip up the line of the Mexico and Vera Cruz Railway, alighting at the station of Paso del Macho, distant about two and a half hours' run, and yet a number of leagues off the base of the Sierras—the object of the journey being to procure plants of Oncidium Cebolleta and Brassavola glauca. At the station of Paso del Macho I found, according to arrangement, my ever faithful old Antonio, and a tramp of two hours over the plains brought us to our hunting ground. Here, on scrubby bushes and arborescent shrubs, scantily clad with foliage, a good many nice plants of the Oncidium were found, though the immediate locality has been pretty well worked over. However, within two hours I succeeded in collecting a couple of a dozen or more good masses with six to eight pseudobulbs—one ought to say pseudobulbous leaves, as there is hardly any pseudobulb, the leaves being thick and cylindrical, and slightly channelled on the upper side.

In slightly more shaded places, and on low trees well exposed to light and all the breezes that blow over the plains, a good lot of the Brassavola was soon found, and it was while searching for these that the rather surprising discovery of a few fairly good masses of Lælia anceps was made —surely far distant outliers of their natural habitat, since one does not think of looking for them much under 1200 métres above sea level, and quite into the heart of these coastal mountains, the elevation of the plains around the station already indicated being about 250 to 300 métres. This fact may not be generally known, and I allude to it for the purpose of showing that Lælia anceps will endure much more trying exposure to fierce heats and sunshine than is generally supposed, and I think of all the Mexican Lælias is the species most likely to succeed in other tropical countries, where L. albida, L. autumnalis, and L. majalis would most likely fail. Here, in my district in the Isthmus of Tehuantepec, where the Vandas, such as V. Sanderiana, V. Hookeriana, and the Philippine Phalænopsis are perfectly at home, I have L. anceps doing finely, though it flowers here as early as the last half of September, while L. albida and the others gradually fade away. As to the white forms of L. anceps, from the drier and cooler regions of the Oaxaca district, I cannot say, though the rare white forms from the coastal mountains of Vera Cruz in the Orizaba district do well enough here.

Returning to the subject of our journey, it was in this district of Paso del Macho that I found on a former occasion a few plants of the pretty little Oncidium stramineum, but a diligent search this time failed to reveal a single plant. So, adding an occasional plant of O. maculatum and some botanical flotsam and jetsam, we retraced our steps, arriving in time to catch the down train to Vera Cruz.

J. C. HARVEY.

La Buena Ventura, Oct. 1st, 1907.

ORCHIDS IN SEASON.

A VERY beautiful hybrid from the collection of William Thompson, Esq., Walton Grange, Stone, received a First-class Certificate from the Manchester Orchid Society on October 3rd last, under the name of Cypripedium × waltonense. Mr. Stevens, in sending the flower, remarks that it was purchased as a seedling of unknown parentage. We believe it is from C. Curtisii and C. niveum, as the flower is white, tinged and dotted with light purple, and the broad dorsal sepal closely and neatly ciliate. It thus appears to be a variety of C. × Cowleyanum.

Several interesting Orchids are sent by Messrs. A. J. Keeling & Sons, Westgate Hill, Bradford, including the beautiful Miltonia × Bluntii, Oncidium raniferum, a small flowered species found in an importation of O. varicosum, Lælio-cattleya Millie (L. Jongheana × L.-c. Ernesti), having small buff-coloured flowers with a much crisped lip, the distinct Paphiopedilum glaucophyllum, and P. × Eismannianum superbum, in which the characters of P. × Harrisianum and P. Charlesworthii are combined.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during November, on the 12th and 26th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on November 14th and 28th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

ODONTOGLOSSUM CRISPUM VAR. LEONARD PERFECT.—We are indebted to Mr. R. Brooman-White, of Arddarroch, for the early history of this beautiful variety, which was figured at page 265. Mr. White purchased some imported O. crispum from Mr. H. A. Tracy, of Twickenham, and out of this batch Leonard Perfect flowered. It was not thought much of the first year, but when exhibited at the Temple Show, in 1906, Messrs. Sander

wished to purchase it, and ultimately did so, and having afterwards divided the plant, sold one piece to Mr. Norman C. Cookson, and the other to Lord Tankerville. We are glad to be able to complete the record.

THE OAKES AMES ORCHIDS.—Mr. Oakes Ames, of North Easton, Mass., well known as a student of the Orchidaceæ, has, according to the *Florists' Exchange*, presented his valuable collection of living Orchids to the New York Botanical Garden. This collection is the result of many years' work. It contains many valuable plants, some of great rarity, and is a valuable addition to the Orchid collection of the garden.

ORCHID PORTRAITS.

BULBOPHYLLUM DICHROMUM, Rolfe.—*Bot. Mag.*, t. 8160.

CATTLEYA × IRIS, HIS MAJESTY.—*Garden*, 1907, ii. p. 481, with fig.

CATTLEYA LUEDDEMANNIANA ALBA.—*Journ. Hort.*, 1907, ii. p. 339, with fig.

CYPRIPEDIUM × NANDII, LOW'S VAR.—*Journ. Hort.*, 1907, ii. p. 409, with fig.

HABENARIA BIFOLIA.—*Journ. Hort.*, 1907, ii. p. 391, with fig.

LÆLIO-CATTLEYA APHRODITE.——*Journ. Hort.*, 1907, ii. p. 363, with fig.

LÆLIO-CATTLEYA ELEGANS (specimen plant).—*Gard. Chron.*, 1907, ii. p. 249, with suppl. plate.

LÆLIO-CATTLEYA WIGANIÆ.—*Journ. Hort.* 1907, ii. p. 315, with fig.

ORCHIS FOLIOSA.—*Gard. Mag.*, 1907, p. 709, with fig.

ORCHIS PURPUREA.—*Journ. Hort.* 1907, ii. p. 391, with fig.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work*].

W. E. L. Cattleya Harrisoniana, Batem.

H. G. A. Miltonia flavescens, Lindl.

J. F. S. Pleurothallis tribuloides, Lindl.

ORCHID PEAT.—We have received from Mr. Frank Dunn, Westport, Wareham, an excellent sample of Orchid peat. It is cut in square blocks, and consists of brown fibre, with a very small proportion of fine matter. Particulars appear on another page.

Photographs received, with thanks. – A. J. O. (next month), W. P. B.

The report of the third November meeting of the R.H S. is unavoidably held over.

CATALOGUE RECEIVED.—We have received the Descriptive Catalogue of Orchids for 1907, issued by Messrs. A. J. Keeling & Sons, Westgate Hill, Bradford, containing a priced list of a large series of showy species and hybrids.

We have received another of the useful little "*One and All*" *Garden Books*, edited by Edward Owen Greening, F.R.H.S., the subject being Onions, by Horace J. Wright, F.R.H.S., price 1d., from the London Agricultural and Horticultural Association, 92, Long Acre, London, W.

ERRATA.

Cypripedium × Rachel var. Bertha was at p. 310 wrongly referred to Odontoglossum. The last two lines of the same paragraph relate to a plant of Odontoglossum × crispo-Harryanum with twenty blooms.

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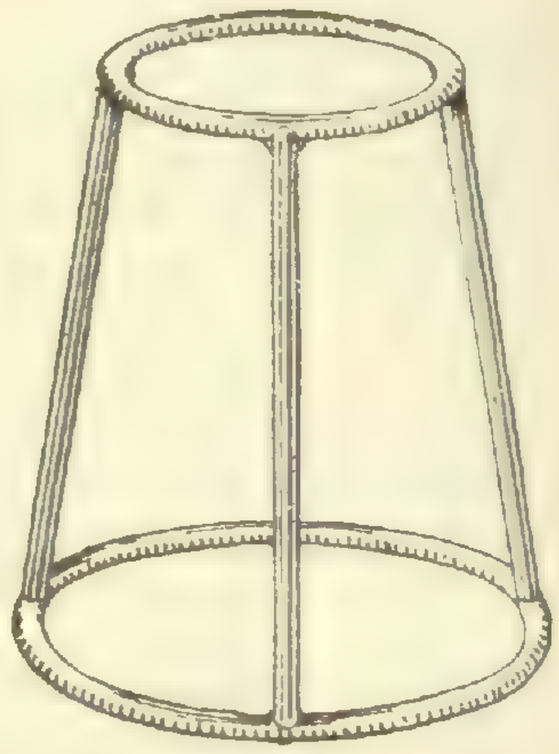

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The next MEETINGS of the COMMITTEE for the purpose of adjudicating upon the Orchids submitted will be held at the Coal Exchange, Manchester, on Nov. 14th and 28th, 1907, at 12 o'clock prompt. Open to Members from 1 to 3 p.m.

P. WEATHERS Hon. Sec.:
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An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XV.] *DECEMBER*, 1907. [No. 180.

DIES ORCHIDIANI.

THE other day I looked in at one of the R.H.S. meetings, and I saw over a hundred plants of the charming little Cypripedium or Paphiopedilum Fairrieanum in flower. And the *Gardener's Chronicle*, in recording the fact, remarked:—"Messrs. Cypher have this plant in many thousands, and have hopes of flowering an albino form before all are proved." Only think of it, when less than three years ago we were doubting its very existence. Before that time Orchidists used to make pilgrimages to Burford to see the one remaining little plant that the country contained, and the record of that plant at Kew "three feet across" used to provoke a smile of incredulity, which really was not surprising, all things considered. We also had the story of how one plant was killed by the attempt to make it bear a capsule. But the new plants seem to be made of sterner stuff, for some of them have borne capsules, just like any other Orchid, and made no fuss about it. I wonder whether we have any seedlings yet from the new batch. Judging by its past reputation there should be a great development in this direction in a few years time.

A note at page 335 reminds me of another "lost Orchid." A good many of us remember the sensational re-discovery of the old autumn-flowering Cattleya labiata some seventeen years ago, and the amount of controversy which it called forth. The very first volume of this work contained an interesting history of the species (pp. 329-331), giving detailed information of how Gardner recorded collecting it near Rio in 1836, and how some five years later he also met with it at the little hamlet of Sapucaya, on the banks of the Rio Parahyba. There were even "dried specimens" from the former locality. It may also be remembered that at that time the habitat of Swainson's plant was not known, though the subsequent discovery of a paper by him in the *Edinburgh Philosophical Journal*, taken in conjunction with other records, proved that the original locality, like the modern one, was Pernambuco (See *O.R.* viii. pp. 362-365). And now we find Gardner's records to be erroneous, or rather based upon

a misidentification, for it is shown that his "C. labiata" from Rio de Janeiro is Lælia lobata, and the one from the Rio Parahyba is Cattleya Warneri. Moreover Gardner's records about the extermination of the plants by the cutting down of the forests to make room for plantations of coffee—plausible enough as it reads in the face of subsequent events—are fortunately unfounded, for the respective species still exist in the localities specified. It is remarkable what an amount of legendary matter has been interwoven with the history of this beautiful autumn-flowering species.

In passing, I would remark that the information given by M. Forget about the conditions under which the species grow should afford a very useful guide as to its culture, as they explain the reason for its particular behaviour in a very graphic way.

M. Forget's notes on Natural Hybrid Cattleyas (pp. 293-296) are also very instructive, and it is a very welcome innovation to find an Orchid collector giving such detailed information about the localities where the different species grow. I fancy some useful cultural hints could be culled from this paper, and doubtless will be by cultivators of this beautiful genus. The information given by M. J. Balme respecting the Mexican Lælias (pp. 302, 303) is equally important.

The other day the question was asked why a very popular florist's flower was declining in favour, and the reply was "absence of novelty to stimulate and keep alive the interest." There is probably much in the remark, but it is not a malady from which Orchid culture is suffering. Rather might it be said that we have too many novelties. Hybridisation is now progressing with such rapid strides that it is difficult to keep in touch with all that is going on. And apart from the fascination of the subject, it is certain that real progress is being made. A little sameness and repetition is unavoidable, but selection will remedy that to a great extent in course of time. There is a more careful selection of parents now than formerly, and hybridists work largely with a definite object in view, both of which make for progress.

Those who deprecate the extent to which hybridisation is now carried on sometimes complain that it leads to the neglect of the species, and I think that of late there has come a little reaction. There are so many interesting and beautiful species which are obtainable in various ways that no wonder they have admirers, even if they fail to become popular. Some of them were touched upon by Mr. F. W. Moore in his recent very interesting lecture at the R.H.S. on the "Lesser-known Orchids" (pp. 303,304).

At all events we now find such remarkable species as Bulbophyllum Ericssoni, B. virescens, and others are being inquired after, and it may lead to the discovery that there is a host of other highly interesting species which are as easily grown as the more popular kinds if the same attention is given to them. I think the trouble is that there are too many. No one can possibly grow them all, but that is no reason why a selection should not be made, and a good many are of such modest dimensions that quite a large number could be accommodated in a small house.

From the last remark I must exclude the giant Grammatophyllum speciosum, whose long delayed flowering at Kew has been one of the events of the present year. Its three enormous spikes were a magnificent sight, but a good many growers would have got tired of waiting for them, especially as the plant has always seemed big enough to flower, and had long been fully established. Fourteen years ago the giant was imported, a great leafless clump, whose portrait appeared at the time, under the title "Monster Mass of Grammatophyllum Sanderianum" (*Gard. Chron.*, 1893, i., Index, p. 8.) About that time the plant was presented to Kew, and found a home above the tank in the Victoria Water-lily house, where at last it has condescended to bloom.

Among the lesser-known Orchids I think we might include the genera Cycnoches and Catasetum, and for downright eccentricity they stand without a rival. The figure given at p. 337 of Cycnoches Egertonianum, which caused such excitement over half a century ago, came very appropriately at a time when the genus is again receiving attention, and some of us may yet see the freak repeated, though the clearing up of the mystery which surrounded it removes much of the element of romance. I fear we shall not have another such a picturesque story for a long time.

The figures of Epidendrum Wallisii given at page 329 are equally interesting. I have more than once protested against inaccuracy in drawing and colouring, but now we see that even the camera may convey a false impression of a flower—indeed we have a graphic illustration of it, and also of the way to avoid it. Of course it is impossible to convey a correct idea of colour in mere black and white, but I should not have thought that photography could be guilty of such deliberate suppression of the spots on a flower as is there shown.

All eyes are now turned towards the new method of direct colour photography, and I hear of two or three Orchidists who are already experimenting with it. I hope they will not fail to report the results.

ARGUS.

CALENDAR OF OPERATIONS FOR DECEMBER.

By W. P. BOUND, Gatton Park, Reigate.

DURING this, the last month of the year many things may be done that will materially help us when the busy season again comes round.

Previous to anything beyond the usual routine work, all the plants in the various houses should have been gone through and well cleaned, and the structures thoroughly washed inside and out. It will be necessary near smoky towns to wash the outsides whenever there is a deposit of filth on the glass. It is very disheartening work, but it is absolutely essential that the inmates should have the maximum amount of light during these short dull days, if they are to come through the winter season in good health.

If there is any season in the Orchid year when improvements can be made it is the present one, and although I know full well it is not quite Orchid culture, yet I see no reason why this should not come under the heading of work in the Orchid houses. What looks worse than to see under the stages bare ground? A small rockery along the edge of the paths would quite alter the ugly appearance so often seen. I do not advise building up concrete walls, with pockets, much preferring placing a few rough stones and working in among them some good retentive soil, in which may be planted the numerous varieties of Rex Begonias, ferns, &c., &c. It should not be carried high enough to impede the heat from the pipes—about 12 inches will be ample, and use stones freely immediately on the edge of the paths, so that the water from damping down and washing out does not sodden the soil in which the plants are placed. It is very surprising how much this will alter the appearance of the houses when that barren place is covered.

Oftentimes there is an ugly bare wall which could be made very pleasing by planting Ficus repens, Pothos ceratocaulis, some of the scandent Epidendrums, or any other plant, for there are plenty to choose from according to individual taste. The point is to cover it up. Then a good stock of pretty edging plants should be propagated, and all the old ones either thrown away or used for planting out under the stages. The plants used for this work should be those that do not want constantly picking over, and they must be such as will stand the frequent dampings between the Orchids. We find that young plants of such varieties as Ficus repens, F. radicans variegata, Asparagus albanensis, Rex Begonias in variety, Saintpaulia ionantha, and small ferns are all good, and as they become too large they are either thrown away or used for some other purpose; the thing is to have **young clean plants that do not want much attention.**

Some may say that Orchid houses are for Orchids, and such plants are intruders, but an edging of such plants is really a protection to the Orchid

leaves, and after all, why not make the houses as picturesque as possible? I have many times noticed when there is nothing in flower in a house, visitors—I do not mean Orchid visitors—take more notice of the various small plants used on the edges and underneath the stages than they do of the Orchids. A garden should be a place of beauty and refinement, that will bring pleasure to all, and if such aids to beautifying the houses are not detrimental to the Orchids—and I am sure they are not—why not use them and make the houses as pleasing as possible?

PREPARING PEAT.—This is another and very important item that can well be done now, thus saving much valuable time in the midst of the busy potting season. This is work that does take up a lot of time, and peat, prepared ready for use, and kept in tubs or bins, keeps just as well as unprepared, In fact, I think it is very desirable that peat should be stored some time before using, and sufficient for next season's work should be got in and prepared without delay. There are often many days when the outside labourers can do nothing, and when possible such help should be taken advantage of. Have everything got ready that does not deteriorate by keeping.

Crocks in various sizes should be prepared, and most important of all, crock dust. This used to take us a long time to prepare before we had a small crock-breaking machine, but with its aid we can soon prepare a good quantity. We have been very liberal with small crock and dust in our compost for some time, and the more we use the better we like it. Especially would I advise its use freely when the peat does not contain much fibre. Get it ready now—it is surprising what foresight and good management can attain when consistently carried out in any branch of gardening, and in no branch is it more important than in Orchid culture, for when the potting time comes on it is with more or less of a rush. There are many other things that demand much attention at that season, so that anything that can be accomplished now will help in forwarding the potting of plants the day they are ready, and plants potted just at the right time will fully appreciate the prompt attention to their needs. When there is a delay in waiting for material, or in its preparation, the roots will have made too much headway to pot without some injury accruing.

DENDROBIUMS.—The flower buds are now fast pushing from the nodes on the majority of the semi-deciduous Dendrobiums. If it is desirable to bring some into flower early, they should be moved from the house in which they have been resting, and given a slightly warmer position and more water. It is important that the change should be gradual, both as regards water and temperature. A house where a minimum of 60° and maximum of 70° is kept would be very suitable. The most important point is to see that they have the maximum of light.

At Gatton, where we devote a house to their culture, we do not shift them at all; but from now, those most forward with their flower buds will be given rather more water than the others, it being our desire to flower them early, when there is little else in bloom. The temperature now maintained is from 58° on a cold morning to 70° with the aid of sunshine. As the buds develop a slight increase will be made, and more water given. It is during January, February, and early March that Dendrobiums are so much appreciated. The flowers at that season last so long, and the plants then make an early growth, which can be much easier matured and ripened. The fine period we enjoyed during September did much to mature the Dendrobes that with us were in a very unripened state at the end of August, and the prospects now are very favourable for a good show of bloom, despite the sunless and cold summer now past.

ONCIDIUMS.—The flower-spikes on such varieties as O. macranthum, undulatum, and the like are fast running out, and it is very important that the points should not be allowed to come in contact with the glass. Wherever it is possible I consider it most desirable that the spikes should be allowed to run horizontally, and not twisted around stakes. We run strings along the centre of the house about two feet from the glass, and tie them to the string; thus when they are wanted for show or any other purpose they can be easily taken down by cutting the strings at both ends, and either tied to stakes or shown in any desired way. If the bulbs are showing any signs of distress it will be much the best policy to cut the spikes off, for if at this season they are shrivelling they will never be able to produce any but very poor flowers, and further, the plant will be ruined for many years.

LÆLIA ANCEPS.—These will soon now be making a fine show. The early or coloured forms are now out, but it is the exquisite white varieties that command so much attention. It is well to wipe over occasionally the bracts from which the flower buds come, to remove some of the gummy substance that sometimes retards the bud from pushing out. Use clean water only for this. I have often wondered why Orchid lovers have not taken up the culture of L. anceps more thoroughly. For such beautiful subjects, I consider they are sadly neglected in many collections. It cannot be said they are not worth their room, nor that they are difficult to grow, and flowering, as they do, during December and January, there ought to be a good series of them in all collections of note.

PLEIONE YUNNANENSIS.—This new addition to the Pleiones promises, well. It is now in flower with us, and is well worth its room in all collections. The flowers last longer than most varieties, and are very attractive. It is a very free grower, and the culture we have given it has proved very successful. After the plants had finished flowering—and last year it extended from December to the end of February—the young growths

were soon in evidence. The plants were then shaken out, and potted in a mixture of two-thirds loam and one-third peat, with plenty of sand and small crocks. Ordinary pots were used, and they were placed on the stage in the Cool intermediate house till the roots and growth had made good progress. They were then only watered when quite dry, but afterwards the supply was increased, and during the time when the new bulb was developing they were never allowed to become anywhere near dry. As soon as they showed signs of leaf-decay we removed them to a house where much air and direct sunshine reached them, gradually reducing the supply of water till all the foliage was gone. From then till the flower buds were in evidence they were kept quite dry, in fact, I do not know if it is even necessary to give any water when they are developing their flower buds. For flowering they should be placed in a light position, where the temperature does not fall below 55°. I believe it will be found all important that this species should be given plenty of material in which to root. Very little drainage will be required, providing they are carefully watered just after the potting, which should be an annual process, the whole growth of the plants indicating that they require a good retentive compost, and plenty of it. With liberal culture I believe they will soon increase, but should say that if they are grown suspended in shallow receptacles they would soon deteriorate.

STENOGLOTTIS LONGIFOLIA.—Although the individual flowers are small, fine spikes of this Cool house Orchid are very decorative, and as they flower from the end of October till well on into the new year they are very helpful in making the Cool house attractive. They are of very easy culture provided they are grown in a very buoyant house. Ours are given a position among the Cymbidiums. After the flowering season is over they generally lose many of their leaves, but this is no detriment, for it allows the young growths more light and air. When they are dying off do not give them quite so much water, but they should not be allowed to become really dry. As soon as the young growths are well started they should be potted, and the best results are attained when each growth is potted separately. A compost of two parts good loam to one part leaf soil will be found very suitable, adding plenty of sand and small crocks to keep it porous. Use ordinary pots and afford a fair drainage. After potting, water carefully till they are well away, and then they will be benefitted by copious supplies.

A GOOD INSECTICIDE.—I have many times been asked to name a really good and safe insecticide for the cleansing of Orchids, and one has been lately brought to my notice of which I cannot speak too highly. I have used it on the various sections of the Orchid family, and other plants, with great success. It removes filth very rapidly, and is very deadly on scale, thrip, &c., yet causing no injury to the foliage, and the plants present a

fine glossy appearance after being sponged. It is called "Mitchell's Reliable Insecticide," and the sole agent is Mr. W. H. Young, late Orchid grower at Clare Lawn and now of the Mercury Nursery, Romford. As this becomes known I am sure it will be used in all collections of plants and Orchids.

In completing the series of Calendarial notes for the year, I wish to thank those who have so kindly expressed their appreciation of my efforts to place before them the system of cultivation carried out at Gatton. Those of us who are always ready for any hint that may assist in improving the plants under our charge will welcome another opinion on this important matter, as many of us differ considerably in cultural details, and it is from contrary opinions that advances are often made in mastering this and other difficult problems.

DENDROBIUM FORMOSUM.

(See *Frontispiece*.)

THE Frontispiece to the present volume represents a very fine specimen of the handsome Dendrobium formosum from the collection of Major G. L. Holford, Westonbirt, Tetbury (gr. Mr. H. G. Alexander). It is the finest of the white-flowered species, and when thus grown is remarkably effective, though a good many people have found a difficulty in its culture, probably from unsuitable treatment. The species has been known for nearly a century, for Roxburgh states that it was sent to the Calcutta Botanic Garden from Sylhet, in 1811, by Mr. M. R. Smith (*Hort. Beng.* p. 63). It was introduced to European gardens in 1837, by Gibson, when collecting for the Duke of Devonshire in the Khasia Hills, and flowered at Chatsworth in May of the following year. It is widely distributed in north-eastern India and Burma, and is also abundant in the Mangrove swamps of the Andaman Islands. It is a lowland species, and Col. Benson remarks that in Burma he never saw it growing at any particular elevation, or at any distance from the sea. Its favourite habitat is on low trees in open situations, where it gets little shade beyond that of the trees when in leaf, and where it gets much shrivelled in the hot dry season from February to April. The late Major-General Berkeley has given very full particulars of the conditions under which it grows, in our second volume (pp. 137-138), which may be briefly summarised as a hot atmosphere, well charged with moisture, and plenty of light. For its successful culture a light warm position is necessary, and at Gunnersbury Park it is grown with great success suspended near the roof of a Fig house, with little or no shading, the hot humid atmosphere favouring vigorous growth and consequent floriferousness, and a plant grown in this situation, with native seedlings round it (one being in flower), received a Cultural Commendation from the R.H.S. in September, 1900. It is a most beautiful Orchid when well grown.

ODONTOGLOSSUM × ROLFEÆ.

THE accompanying figure represents a fine specimen of the beautiful Odontoglossum × Rolfeæ which flowered at Kew last spring. The

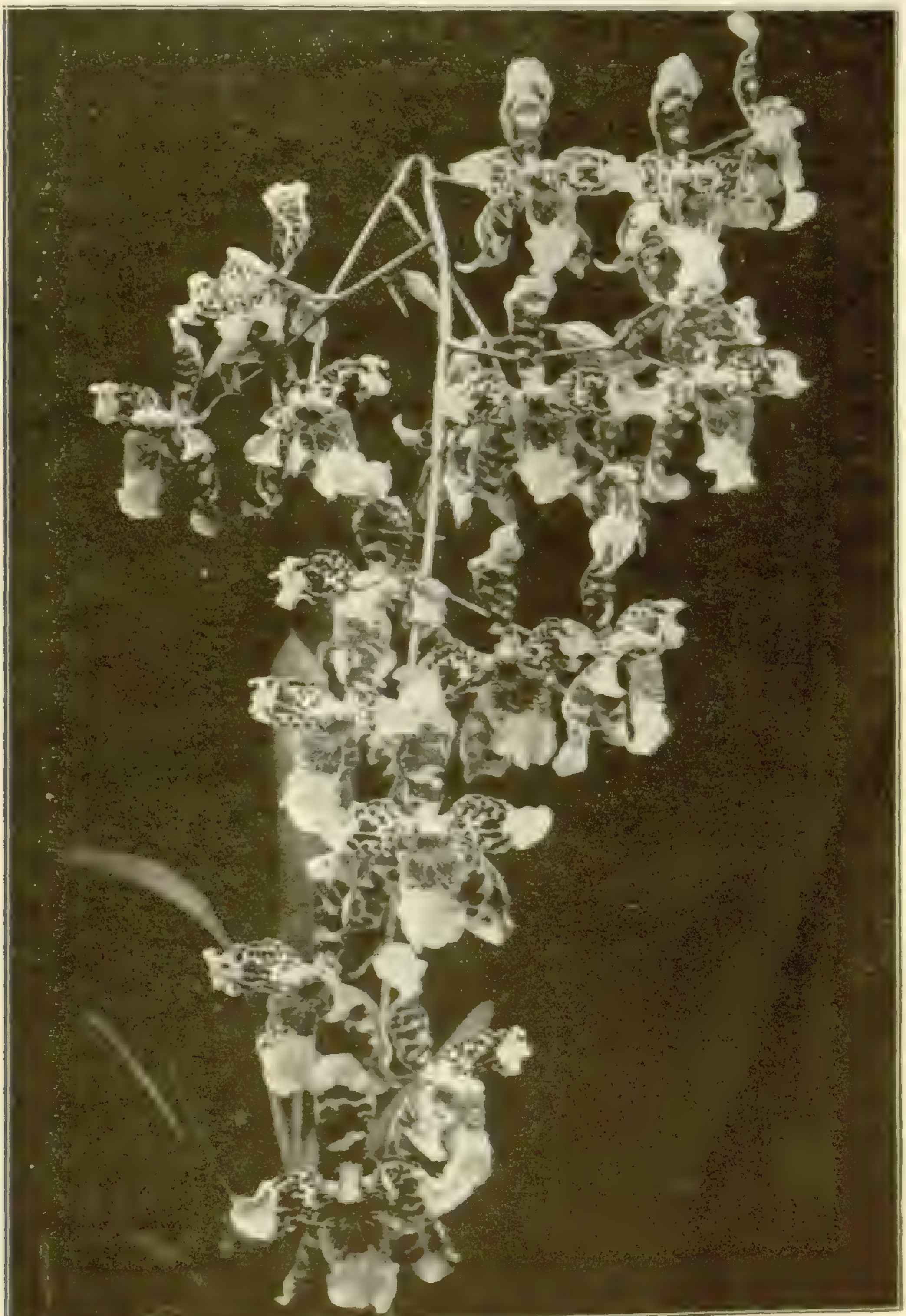

Fig. 38. ODONTOGLOSSUM × ROLFEÆ.

inflorescence bore two side branches and an aggregate of twenty-three flowers, producing a very charming effect. The hybrid was originally raised by M. Ch. Vuylsteke, from O. Pescatorei ♀ and O. Harryanum ♂, and was

described in these pages nine years ago (vi. p. 270), and afterwards figured (x. p. 57, fig. 6). Since then it has been raised in several other establishments, from the same and the reversed cross, and has proved to be somewhat variable in colour and markings, and a most useful decorative plant. The above figure is reproduced from a photograph by Mr. F. W. Rolfe.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING was held at the Royal Horticultural Hall, Vincent Square, Westminster, on October 29th, when there was a remarkably fine display of Orchids, and the awards consisted of two Gold and seven other Medals, four First-class Certificates, and four Awards of Merit.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged an exceptionally beautiful group, occupying a space of 200 square feet, and containing over a hundred distinct varieties, many of them raised at Westonbirt. The Society's Gold Medal was awarded, and also the Gold Lindley Medal, in recognition of the excellent culture of the plants. Several fine things were shown in batches, the centre consisting of a beautiful strain of Cattleya × Fabia raised in the collection, with other clusters of C. × Mantinii and × Mrs. J. W. Whiteley, Vanda Kimballiana and cœrulea, some fine examples of Oncidium varicosum, Odontoglossum crispum, Dendrobium Phalænopsis and var. hololeucum. There were also good examples of Cattleya labiata, Bowringiana, Warscewiczii, Dowiana aurea, and × Hardyana, with the rare var. alba, C. × Enid, × mollis, × Wendlandiana, × Cleopatra, × Thayeriana, × Lord Rothschild, × Mrs. Pitt, × Waldemar, × Dusseldorfii var. Undine, Oncidium tigrinum and Jonesianum, Cymbidium erythrostylum and Mastersii, Phalænopsis amabilis Rimestadiana, Lælio-cattleya elegans, Clive, Baroness Schröder, Helena, Berthe Fournier, luminosa, Rowena, Lustre and Cassiope Westonbirt var., with L.-c. Hildegard (C. Warscewiczii × L.-c Decia), L.-c. Memnon (L.-c. elegans × C. Mendelii), Brassolælia Helen, Digbyana-Warscewiczii, Digbyano-Mossiæ, Sophrocattleya Nydia and Chamberlainiana, a selection of Cypripedium insigne, Fairrieanum, × Charlesianum superbum, × Dante, × Tityus superbum and other hybrids. First-class Certificates were given to Cattleya labiata alba Purity, a beautiful albino, to C. × Fabia gigantea, an exceptionally large and richly-coloured form raised at Westonbirt, and to C. × fulvescens, Westonbirt var. (described at p. 349). An Award of Merit was given to Sophro-Lælia-Cattleya Medea (C. bicolor × S.-l. læta Orpetiana), the latter a dwarf hybrid, having a rose-purple flower, with a deep violet-purple lip, much resembling the seed parent in shape.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), received a Silver Flora Medal for a fine group, including many excellent Cattleyas and Brasso-

cattleyas, with fine examples of Pleione lagenaria, Oncidium bicallosum and cucullatum, Cypripedium insigne Sanderæ, C. i. Oddity, the fine C. × H. S. Goodson, &c. Cattleya × Aliciæ (labiata × Iris), gained an Award of Merit.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), received a Silver Banksian Medal for a good group, consisting mostly of showy Cattleyas and Lælio-cattleyas, all raised in the collection. L.-c. epicasta var. The Premier was a remarkably fine variety which gained an Award of Merit.

M. H. Graire, Amiens, France, received a First-class Certificate for Odontioda Devossiana, (Odontoglossum Edwardii ♀ × Cochlioda Nœtzliana ♂), a remarkable novelty having a compact panicle about two feet high, and bearing two dozen crimson flowers, with the lip three-lobed, lighter at the apex, and the crest yellow.

J. Bradshaw, Esq., Southgate (gr. Mr. Whitelegge), sent Cattleya Harrisoniana alba superba and C. labiata Augusta, the latter a beautiful white form, with a trace of pink in front of the yellow disc of the lip, which gained an Award of Merit.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent Odontoglossum crispum Boadicea and Imperatrix, two handsomely spotted forms.

J. Gurney Fowler, Esq., S. Woodford (gr. Mr. Davis), sent Lælia pumila alba, and the rare natural hybrid Odontoglossum × Duvivieranum.

F. Ducane Godman, Esq., South Lodge, Horsham, sent the handsome Cypripedium × Phædra superba.

J. Shepherd, Esq., Twyford, Berks, sent a fine specimen of Lælio-cattleya Tiresias.

Miss Wilmott, Great Warley, Essex, sent a handsome form of Cattleya × Minucia.

Messrs. James Cypher & Sons, Cheltenham, staged a large and handsome group, which gained a Silver Flora Medal. It contained many Cypripedium Fairrieanum, C. × Arthurianum, and other good Cypripediums, with Masdevallias, Phalænopsis, Cymbidiums, Epidendrum ciliare, &c.

Messrs. Armstrong & Brown, Tunbridge Wells, received a Silver Banksian Medal for a good group, consisting largely of showy hybrid Cattleyas.

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Banksian Medal for a fine group of Cattleya labiata and various hybrids, Cypripedes, a fine Odontoglossum Uroskinneri and other good things, with a pretty little Zygocolax, derived from Zygopetalum maxillare and Colax jugosus.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a brilliant group, containing Cattleya Bowringiana Low's var., bearing five spikes and over eighty flowers, a lot of C. labiata, including seven good white forms, some good Odontoglossum crispum, Houlletia Brocklehurstiana, Ancistrochilus Thomsonianus, &c.

Messrs. James Veitch & Sons, Chelsea, also received a Silver Banksian Medal for a bright group of Cattleyas, Lælio-cattleyas and Cypripediums, the centre being made up of some good Cypripedium insigne Sanderæ. C. × Baron Schröder, C. × Actæus, and others were also very good.

M. Mertens, Ghent, sent a Miltonia × Bleuana, a large-flowered M. vexillaria, and three hybrid Odontoglossums.

At the meeting held on November 12th the exhibits were less numerous, but six Medals and three other awards were given.

H. Spicer, Esq., Aberdeen Park, Highbury (gr. Mr. Lovegrove), staged a group of about 100 Cypripedium Spicerianum, arranged with maidenhair ferns and Panicum, a Silver Banksian Medal being awarded.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), showed Lælio-cattleya Golden Beauty (L.-c. Ernesti × C. Dowiana aurea), bearing spikes of ten and twelve flowers and buds, in colour bright yellow with the front of the lip ruby red, and L.-c. Priam (C. Harrisoniana × L.-c. callistoglossa), with pale lilac sepals and petals, and the lip rich purple-crimson in front, and white and yellow behind. A First-class Certificate was given to Cypripedium × nitens-Leeanum var. Hannibal, a very large and handsome form.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), sent a very fine specimen of Habenaria Ugandæ, bearing twenty-five flowers, which received both an Award of Merit and and a Cultural Commendation.

J. F. Alcock, Esq., Northchurch, Berkhamstead, sent Cypripedium × nobile, a fine flower of unrecorded parentage.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), sent Cœlogyne × Colmanii and Brassocattleya Mary, both previously certificated.

F. Ducane Godman, Esq., Horsham, sent Cattleya labiata Mrs. F. Ducane Godman, a richly-coloured form.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium × Emperor of India.

Messrs. James Veitch & Sons, Chelsea, sent a good selection of Orchids in the centre of a magnificent group of stove and greenhouse plants, to which a Gold Medal was given. Cypripedium Diomede (Niobe × Leeanum), was a very pretty flower.

Messrs. James Cypher & Sons, Cheltenham, sent a fine selection of

Cypripedium hybrids and forms of C. insigne, to which a Silver Banksian Medal was given.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a good group of Cypripediums, Cattleyas, including three white forms of C. labiata, and other interesting Orchids.

M. Mertens, Ghent, received a Silver Banksian Medal for a small group of hybrid Odontoglossums and Cattleyas.

Messrs. Sander & Sons, St. Albans, also received a Silver Banksian Medal for a very pretty group, containing a fine Vanda cœrulea, bearing spikes of twelve and twenty flowers, a good Phalænopsis violacea, Listrostachy's fimbriata, from Uganda, Oncidiums, &c.

Messrs. Armstrong & Brown, Tunbridge Wells, received a Bronze Banksian Medal for a good selection of hybrid Cypripediums, C. insigne Sanderæ, &c.

Messrs. Edgar & Co., South Woodford, sent seven distinct forms of Cypripedium insigne.

Mr. H. A. Tracy, Twickenham, sent Cypripedium × Fred Hardy var. grande, a very fine form.

Mr. W. H. Young, Mercury Nursery, Romford, sent two pretty forms of Cypripedium × Euryades and a good yellow form of C. insigne.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on October 31st, when the following members of the Committee were present: Messrs. E. Ashworth (Chairman), Cowan, Warburton, Walmsley, Keeling, F. K. Sander, Shill, Ashton, Cypher, Leemann, Parker, P. Smith, R. Ashworth, and G. S. Ball. The room presented a remarkably beautiful appearance, it being by far the best show this season, and extra stages had to be provided for the exhibits. Over fifty plants were placed before the Committee, who have gradually raised their standard of judging, and plants may be now said to fairly deserve their awards.

G. Shorland Ball, Esq., Burton, Westmoreland, a newly elected member, after a lapse of some years, staged a good group and gained a Silver Medal. Cypripedium Fairrieanum var. G. S. Ball, with deep purple lines on a clean white background was given a F.C.C., and C. × Eve, with an almost pure white dorsal sepal, and pale green petals with a darker mid-stripe, an A.M. C. × Harrisianum superbum var. G. S. Ball, and a good C. × Archimedes var. G. S. Ball also received the same award.

Ziba A. Ward, Esq., Cringlewood, Northenden, (gr. Mr. Weatherby), staged a nice group of Cypripediums, chiefly insigne varieties and hybrids, and was awarded a Silver Medal.

Max Isaac, Esq., Wildecroft, Liverpool (gr. Mr. Driver), sent a small

group, mostly Cypripediums, in which was a good C. insigne Sanderæ (F.C.C. confirmed), gaining a Bronze Medal.

S. Gratrix, Esq., Whalley Range, (gr. Mr. Shill), showed Cypripedium × Hitchinsiæ, var. Diabolo, a bold handsome flower, with a broad, almost white dorsal sepal, pale green at the base and a few chocolate spots above (F.C.C.).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), staged a very fine group, and gained Silver-gilt and Bronze Medals. Cattleya labiata var. King of Greece, a fine albino, was deservedly awarded a F.C.C., and C. l. Mrs. Warburton, white with crimson streaks on the lip, an A.M. C. l. var. Purple Moth and C. aurea, with traces of crimson on the sepals, gained a similar award, also Cypripedium × triumphans Crooks' var. and a fine plant of Vanda cœrulea. Odontoglossums and Cypripediums completed the group.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), gained a F.C.C. for a beautiful form of Cattleya × Fabia.

E. Rogerson, Esq., Oakdene, Didsbury, staged a small group of very good things, conspicuous among them being Cypripedium × Priam with two good flowers (F.C.C. confirmed). C. × Mrs. Atchison (Charlesworthii × Smithii), C. × Vidor, and Cattleya × Dusseldorfii each gained an A.M. At the back two plants of C. × Hardyana alba with two and three flowers showed well, while several good Cypripediums completed the group, which gained a Silver Medal.

Mr. E. Sadler, Newbury, Berks., showed two plants of Cattleya labiata (Vote of Thanks).

J. McCartney, Esq., Hey House, Bolton, (gr. Mr. Holmes), staged a fine miscellaneous group, and was awarded a Silver and a Bronze Medal. I noticed a well-flowered Cattleya labiata, some good Cypripediums and spotted Odontoglossum crispum, and a fine O. grande with the chocolate blotches running right to the tips of the sepals. Cypripedium × Mrs. Wm. McCartney gained an A.M.

J. H. Bromilow, Esq., Rann Lea, Rainhill (gr. Mr. Morgan), showed Cypripedium × Actæus superbum Drewett's var. and C. Charlesworthii Rann Lea var., both gaining an A.M. (Bronze Medal for group).

J. H. Craven, Esq., The Beeches, Keighley (gr. Mr. Cowley), gained an Award of Merit for Cypripedium × Leeanum var. Adrien Lefebre. He also showed a nice Cattleya labiata var. delicata, with rich crimson in the throat (Silver Medal for group).

Messrs. Cypher, Cheltenham, staged a fine group of mixed plants, all of good quality, and was awarded a Silver Medal. It included the chaste Cattleya labiata White Queen, and the very pretty hybrid C. Harrisoniæ × Hardyana; also many good Cypripediums of insigne type and hybrids, and

a nice batch of C. Fairrieanum. Phaiocymbidium chardwarense gained an A.M.

Messrs. Sander, St. Albans, showed a compact group of fine Orchids, gaining a Silver Medal. Several Cattleya × Fabia were very rich in colour, and C. × Lord Rothschild var. Diabolo had creamy sepals and petals. A few good Cypripediums included × Dr. Alix (Harrisianum × nitens), and × Leander.

Messrs. Charlesworth, Bradford, staged a fine group, in which was the beautiful Brassocattleya Queen Alexandra, B.-c. Digbyano-Warneri. Odontoglossum × Phœbe magnificum, O. × Gladys, a richly-coloured Lælio-cattleya luminosa, Cypripedium × Wottoni, &c. (Silver Medal).

Messrs. A. J. Keeling and Sons, Bradford, staged a mixed group, in which I noticed a pretty Cypripedium × Lawrebel, two good spikes of Oncidium Forbesii, several good Cattleyas, &c. (Bronze Medal).

W. Bolton, Esq., Wilderspool, Warrington (gr. Mr. Cain), showed a small group of good quality (Bronze Medal). Cattleya labiata var. albo-oculata with six flowers on a spike was very striking, also a fine plant of Lælio-cattleya Henry Greenwood. There were also Cattleya × Maroni, C. × Mantinii, and several good Cypripediums.

Messrs. Hugh Low & Co., Enfield, received a Vote of Thanks for a small group.

G. H. Peace, Esq., Monton Grange (gr. Mr. Mace), showed Cypripedium Memnon and C. × Milo Cobb's var.

AT the meeting held on November 14th, there was again a very fine show of Orchids, every available stage being filled. Committee present:—Messrs. E. Ashworth (Chairman), R. Ashworth, Ward, Warburton, Walmsley, Ashton, Shill, Sander, Cowan, Cypher, P. Smith, and Keeling. Over sixty plants were placed before the Committee, and with the keen competition now running for the various "cups," they would be well advised to sit half an hour earlier, as several were obliged to leave before the group judging commenced.

J. H. Craven, Esq., Keighley (gr. Mr. Cowley), was awarded a Silver Medal for a nice group, containing many yellow Cypripedium insigne and other good things. A F.C.C. was awarded to the fine C. × œnanthum Craven's var. (insigne Harefield Hall var. × Harrisianum superbum), and the same was confirmed to C. × Germain Opoix. C. insigne Dormanianum and C. i. Craven's var. were each given an A.M.

E. Rogerson, Esq., Didsbury, (gr. Mr. Price), showed six good Cypripediums, gaining an A.M. for C. × Actæus var. Rogersoni, C. × Sallieri var. Rogersoni, and C. × Charlesianum var. Rogersoni.

R. Farrer, Esq., Clapham, Yorks, was given an A.M. for Cypripedium × Hitchinsiæ var. Ingleborough.

Z. A. Ward, Esq., Northenden (gr. Mr. Weatherby), showed a fine group, composed chiefly of Cypripedium insigne Sanderæ and arching sprays of Odontoglossum crispum, with a fine pot of C. insigne Harefield Hall var. in the centre (Silver Medal).

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), showed the rare and curious Dendrobium Cœlogyne, which gained an A.M.

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), showed two groups and gained two Silver Medals. I noticed a fine Lælio-cattleya × Decia

alba, and a nice plant of Miltonia vexillaria Leopoldi had a F.C.C. confirmed, also Odontoglossum × Humeanum. Awards of Merit were given to a fine plant of Calanthe × Veitchii, Cypripedium × Leoniæ var. grandiflorum, C. × Tracyanum, Vine House var., and C. × Actæus, Vine House var. Several other plants had their previous awards confirmed.

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), staged a nice little group of excellent quality. Cattleya × Fabia, West Point var., gained an A.M., also Cypripedium × Standard, C. × Harri-Leeanum, and the rare C. × Chorltoni.

J. McCartney, Esq , Bolton (gr. Mr. Holmes), staged a fine group of Cypripediums, chiefly the best varieties of C. insigne, with a pretty C. × Charles Richman and Cattleya × Chamberlainiana Silver Medal).

J. H. Bromilow, Esq., Rainhill (gr. Mr. Morgan), staged a most effective group, which received a Silver-gilt Medal. He also gained a F.C.C. for a Cypripedium × Marjorie (× Leeanum × Actæus), and Awards of Merit for C. insigne var. Aberdeen and C. × Leander, Rann Lea var. There were several plants of C. Charlesworthii of very good type ; and the very fine C. × fulshawense (C. Boxalli × Harefield Hall var.) had a F.C.C. confirmed.

G. S. Ball, Esq., Burton, Westmoreland (gr. Mr. Herdman), was awarded a Silver Medal for a good group of Cypripediums. An A.M. was given to C. × Hitchinsiæ var. Perfection, also to C. Godefroyæ var. Balliæ and C. niveum var. Goliath. The F.C.C. was confirmed to C. × Baron Schröder, C. × Leeanum var. Corona, C. insigne Chantini Lindeni, and C. i. Sanderæ.

Mr. W. S. Shackleton, Great Horton, Bradford, staged a nice little group of Cypripediums, which gained a Bronze Medal. It included C. insigne Harefield Hall var., C. i. Sanderæ, C. Fairrieanum, and C. × Arthurianum pulchellum, &c. C. Lawrenceanum Hyeanum had a F.C.C. confirmed.

Messrs. Sander, St. Albans, showed Cypripedium × longwoodense giganteum, C. × The Earl (× selligerum × œnanthum), and several other good things (Vote of Thanks).

W. Bolton, Esq., Wilderspool (gr. Mr. Cain), showed a nice little group of Cypripediums, including C. × triumphans, C. × Arthurianum, C. × Ito, C. insigne Sanderæ, C. × Niobe, &c.

Messrs. Charlesworth, Bradford, showed the chaste Cattleya labiata alba, a nicely blotched Odontoglossum crispum, and several Cypripediums of good quality.

Messrs. Hugh Low & Co., Enfield, showed Cattleya labiata var. Queen Maud, very delicately tinted, Cypripedium villosum auriferum, and C. × Madam Jules Hye.

Mr. J. E. Sadler, Beedon, Berks., showed Cattleya labiata Queen Maud and Cypripedium × Maudiæ.

Messrs. A. J. Keeling & Sons, Bradford, gained a Bronze Medal for a group, composed chiefly of Cypripedium insigne and its hybrids, with several plants of C. × Lawrebel.

Mr. J. Robson, Altrincham, showed Cypripedium × bowdonense (× Sallieri × triumphans), a good flower with the dorsal sepal green at the base and edged with white (A.M.), C. × aureum var. Pomone, a few C. Fairrieanum, and several others (Bronze Medal).

Messrs. J. Cypher & Sons, Cheltenham, gained a Silver Medal for a group of many good things, including C. × Minos Youngii, C. × Niobe, Westonbirt var., many good C. insigne, C. × Leeanum, &c. H. T.

ODONTOGLOSSUM GRANDE.

THE annexed figure represents a beautiful example of Odontoglossum grande from the collection of A. J. Oakshott, Esq., J.P., Oaklands, Lower Bebington, Birkenhead, and is reproduced from a photograph kindly sent, together with some remarkably fine living flowers. The figure shows a small plant, with one lead, and carrying three spikes with an aggregate of fourteen flowers. The spikes are sent to show the quality of the flowers, which is excellent, both as to size and colour, in fact no one could wish for better developed blooms, and the plant itself must have formed a picture.

Fig. 39. ODONTOGLOSSUM GRANDE.

A second photograph shows another plant, grown in a 10½ inch pan, and carrying fifty-five equally fine flowers, but the smaller one was selected for reproduction, because it shows better the general character of the species. They are both fine examples of good culture, and reflect great credit on **Mr. C. W. Findlow, who has charge of the collection.**

As to the method of culture adopted Mr. Findlow remarks:—"We grow Odontoglossum grande at the warmest end of the Cool house. We used to move them into the Intermediate house during the growing season, but we find they do just as well in the Cool house altogether. During the

growing season I find occasional soakings of manure water very beneficial; also damping amongst the pots with soot water. They enjoy rather more light during the summer than crispums, and, like crispums, plenty of air whenever possible. When flowering is over we keep them fairly moist for a few weeks, as they then make up fine bulbs, then gradually decrease the supply, but we never allow them to become so dry as to cause the bulbs to shrivel in the least. They are grown in the ordinary compost for Odontoglossums, chopped peat, and sphagnum (but no leaves), and a good sprinkling of crushed potsherds. O. grande has a bad reputation for losing vigour, but they improve here each year under this treatment. Several of the leads this season had three spikes, and we have had a spike carrying nine perfect flowers." Should any reader fail to succeed with this beautiful species we strongly recommend him to adopt the above treatment, for better results we have never seen.

Odontoglossum grande, the largest flowered species in the genus, is a native of Guatemala, where it was discovered by Mr. G. Ure Skinner, who introduced it to cultivation. It was described from dried specimens by Dr. Lindley in 1840 (*Bot. Reg.* xxvi., Misc. p. 47), but had been previously introduced, for two plants of it flowered in the collection of James Bateman, Esq., at Knypersley, in August and October of that year. Mr. Skinner had forwarded to Mr. Harris, of Kingsbury, a number of Guatemalan Orchids, accompanied by dried specimens and remarks on climate, &c., which letter was handed to Dr. Lindley for publication, and formed the subject of a very interesting paper. Skinner described O. grande as growing in damp shade, in a climate of 60° to 70° F., seldom, however, reaching the higher figure, and he expressed an opinion that the reason why the plants he had formerly sent home had not flourished was that they had been kept too warm. Bateman, who soon afterwards figured the species (*Orch. Mex. & Guat.* t. 24), remarked that when the plants first arrived they were universally supposed to be O. Insleayi, because of the great similarity in the bulbs and leaves. He also alluded to the fact that wild specimens had spikes bearing as many as eight flowers, or double the number produced by his own plants. It is a noble species when well grown, and the accompanying figure is an excellent illustration of its character under suitable treatment.

A TRIO OF ODONTOGLOSSUMS.—The commercial grower of Orchids, who has facilities for handling Odontoglossums, would find O. grande, O. Schlieperianum, and O. Insleayi three useful and easily grown subjects. They are all very easy to grow providing a suitable compartment can be found for them while they are making their growth in summer. In Nature they are found at high altitudes in woody, moist situations in Central America, where the rainy season is long and the percentage of atmospheric moisture

high, relieved only by frequent cool winds. In a cool, moist greenhouse where the temperature can be kept down without excessive shade, these conditions can be fairly well maintained. These species do not suffer so much from the humid heat of summer as the Colombian species do. A good circulation of air, which should not be allowed to become dry, is important. Stagnant corners, or positions where the circulation is not perfect, such as a shelf against a wall, should be avoided. The plants should be hung as near to the glass as possible. If the two extremes—stagnation and a dry atmosphere—are guarded against, the result should be satisfactory.—T. Anstiss, in *Journal of Horticulture*.

OBITUARY.

JAMES HERBERT VEITCH.—We regret to record the death, on November 13th last, of Mr. James Herbert Veitch, late managing director of Messrs. James Veitch & Sons, Chelsea, after a long illness. The deceased, who was the son of Mr. James Gould Veitch, was born in 1868, and, after completing his education, commenced work at Chelsea in 1885. Some six years later he undertook a voyage to India, the Straits Settlements, Japan, Corea, Australia, and New Zealand, visiting many public and private gardens and nurseries, and studying the vegetation of the various places visited, his journeyings and impressions being recorded in a series of letters which appeared in the *Gardeners' Chronicle* from 1902 to 1904, under the title "A Traveller's Notes." These were afterwards amplified and issued as a separate volume in 1896. In 1898 the Chelsea Nurseries were formed into a private limited company, and two years later Mr. J. H. Veitch was appointed manager on the retirement of his uncle, Mr. Harry J. Veitch. Some time previously the firm had sent Mr. E. H. Wilson to China on a collecting expedition, which resulted in the introduction of many new plants, and a few Orchids, among which we recall Cypripedium tibeticum, King (*Bot. Mag.* t. 8070), Dendrobium bellatulum, Rolfe (*l.c.* t. 7985), and D. Wilsoni, Rolfe. It was during the preparation of the important work, the *Hortus Veitchii*, published last year, that the deceased showed signs of failing health, and soon after its publication he had to give up active work, and Mr. Harry J. Veitch returned to the post of managing director. Mr. James H. Veitch removed to the neighbourhood of Exeter, but gradually became worse, and the end came on Wednesday, November 13th, when he succumbed to an attack of paralysis. He was interred at Exeter on Monday, November 16th. He leaves a widow to mourn his loss, for whom the greatest sympathy is felt. His name is commemorated among Orchids by the handsome Cypripedium × James H. Veitch, a hybrid between C. Curtisii and C. Stonei platytænium, which was raised in the establishment, and flowered for the first time in 1894.

A FUNGUS RESULT.

THE accompanying photo represents a common mushroom (Agaricus campestris), one of many firmly and socially growing on some imported and unpotted plants of Odontoglossum crispum.

When recently carrying out some experiments with Fungus cultures, the thought occurred to me that if any fungus was necessary for the germination or future existence of Orchids it should be found growing with them in a natural state, and might possibly be imported with the species.

Accordingly some recently-imported plants were placed on a quantity of oak leaves, which had been gathered last Autumn, believing that, if present, the mycelium would spread into the leaves, and thus make a pabulum or breeding ground, to be afterwards used for experimental purposes in seed raising, &c.

After a few weeks of genial treatment the long expected and welcome symbiotic fungus made its appearance, spreading, not from the Orchids to the leaves, but from the latter to the former, with the result that for my tender care bestowed on the crispums I was in return given a requisite supply of mushrooms, which were duly assimilated one morning for breakfast. "Ye gods, what a glorious feast!"

If the common mushroom so elevates its lowly growing place from the turf to an exotic, it is not to be wondered at that the Queenly crispum shows the same desire to improve *its* social position, for it certainly has of late been frequently changing its habitat in search of something.

Haywards Heath. GURNEY WILSON.

HABITAT OF ODONTOGLOSSUM CRISPUM.

IN an article on "The Habitat of Odontoglossum crispum" at page 328 it is pointed out that M. Forget cannot agree with M. Claes in depreciating the Odontoglossum crispum collected in the Velez district. I have been collecting O. crispum in the district alluded to for about ten years, including a few years for Messrs. Charlesworth & Co., which I think speaks well for the type. Velez is really a centre, and there are certainly places around Velez where inferior types are found, but, as Mr. Black remarks, the same applies to Pacho, and that was my experience in collecting there in 1895. M. Claes has himself collected in the Velez district, and had a collection there, so that it is difficult to see why he does not like the Velez type.

The village that Mr. Black was unable to find on the map will probably be Simacota. Here O. nobile or Pescatorei grows, but I am not aware that O. crispum reaches this place.

Alderley Edge, Cheshire. J. BIRCHENALL.

AN AMATEUR'S COLLECTION.

WE have received a very interesting letter from a correspondent, showing what an amount of pleasure can be obtained from even a small house of Orchids. "I have had a small house built," he writes, "and already have some pretty varieties. Cattleya × Mantinii and Cypripedium × Evelyn Ames are just bursting into flower. C. × Maudiæ magnificum, C. insigne Harefield Hall, C. i. Wm. Millie Dow, and other yellow varieties, I have just cut, and C. i. Sanderæ, C. × Arthurianum and others are in bloom. Probably next year I shall have them in fine condition, and a few more good varieties in Odontoglossums. Of these I have already some good varieties, and others unflowered." He has also commenced hybridisation experiments, and intends to send a few seeds to another correspondent who had expressed a wish to try his hand at raising seedlings while his own capsules are ripening. It is pleasant to see a friendly feeling of this kind, for our correspondent remarks: "I find the majority of people are afraid of parting with a few seeds." But there may be mutual advantages in an exchange of this kind, for it gives an increased chance of the seedlings germinating, and this is really the most difficult part of the business. It is surprising what an amount of pleasure can be got out of a small house of Orchids, and the raising of seedlings and watching their gradual progress until the flowers appear is the most fascinating of hobbies.

ORCHIDS IN SEASON.

FLOWERS of two handsome Lælio-cattleyas are sent from the collection of Major G. L. Holford, Westonbirt, Tetbury, by Mr. Alexander. L.-c. Barbarossa (L.-c. callistoglossa × C. Trianæ) is a remarkably large and handsome thing, with broad rosy-lilac sepals and petals, and the lip rich amethyst purple to near the base, somewhat darker on the disc, and with a little dull orange deep in the throat. L.-c. Golden Oriole (L.-c. Charlesworthii × C. Dowiana aurea) has deep orange-coloured sepals and petals, and a reddish purple lip, which is veined throughout with orange-coloured veins, as in the pollen parent. The latter species is represented to the extent of three-fourths, and the plant promises to develop into a very showy thing. A flower of the handsome Cypripedium × nitens-Leeanum var. Hannibal, which gained a First-class Certificate from the R.H.S. on November 12th, is also sent. It is very large and of excellent shape, with the lip and petals suffused with shining purple-brown, and the base and centre of the dorsal sepal green, heavily blotched with brown, and the broad margin white.

A fine spike of Dendrobium superbiens bearing nineteen well-developed flowers is sent from the collection of A. J. Oakshott, Esq., Lower Bebing-

ton, Birkenhead, by Mr. Findlow. Its bright rose-purple flowers are very effective, particularly by artificial light, and are excellent for cutting, remaining in a perfect condition for a long period.

Several interesting flowers are sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon. Epidendrum erubescens is a rare and pretty little Brazilian species, which is said to grow well on a piece of teak, suspended near the glass in the Cool intermediate house, and receiving plenty of water and light. A plant of Masdevallia muscosa is bearing forty flowers, and forming quite a picture. Seraphyta multiflora, bearing four branching panicles, is very graceful. Odontoglossum grande is said to have done very well this year, and the flowers sent include a pretty light form of the species. Other handsome things are Dendrobium formosum, D. Phalænopsis and D. aureum, Cattleya labiata, Lælia pumila, Vanda cœrulea and Kimballiana, Oncidiums Forbesii, sarcodes and flexuosum, the brilliant Cochlioda vulcanica, Odontoglossum luteopurpureum, bictoniense and crispum, Gomesa planifolia, Stenoglottis longifolia, Angræcum bilobum, and Calanthe vestita, while those of more botanical interest include Bulbophyllum Careyanum and rufinum, Platyclinis Cobbiana, Epidendrum nocturnum, E. latilabre and Polystachya laxiflora.

A two-flowered inflorescence of the pretty little Lælio-cattleya Duchess of York has been sent from the collection of G. Hamilton-Smith, Esq., of Finchley, by Mr. Coningsby. It is a seedling from L. crispa × C. Gaskelliana alba, now flowering for the first time, and will evidently develop into a good thing.

A pretty little hybrid Paphiopedilum is sent from the collection of E. F. Clark, Esq., of Teignmouth. It was raised in the collection from P. × Williamsianum and P. insigne Sanderæ, the seed being sown in April, 1903, so that the plant is over 4½ years old. It has retained a good deal of the Williamsianum character, and the prevailing colour may be described as yellowish green, with a little spotting on the dorsal sepal. Mr. Clark suggests that it may throw some light on the origin of P. × Williamsianum, as if that were really derived from P. × Harrisianum and P. venustum one might expect to see some barbatum influence in some of its hybrids, but none is visible in this case, though P. venustum and P. insigne Sanderæ are very easily traced. Mr. Clark has several other seedlings, which will probably show some variation. Mr. Clark alludes to his seedlings of P. × Harrisianum nigrum × venustum, and remarks that he has one exceedingly like P. × politum, thus showing barbatum and venustum influence to the exclusion of villosum. Flowers of P. × Crossianum and P. × Violetta are also sent.

Four interesting seedlings, now flowering for the first time, are sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, by Mr. Rogers.

Paphiopedilum tonsum × insigne Sanderæ is a light form of P. × Krishna, and a well-shaped flower. P. tonsum × callosum is a fine form of P. × Felicity. P. callosum × œnanthum is the reverse cross of the one known as Olga Bagshawe, and is very good in shape and colour, while P. × Lathamianum × barbatum Warneri is a form of P. × Dakinii.

HYBRIDISING WITH MIXED POLLEN.

A YEAR ago we recorded an experiment made in the collection of R. G. Thwaites, Esq., of Streatham, by crossing Lælia xanthina with mixed pollen from Cattleya Warscewiczii and C. Dowiana aurea (*O.R.* xiv. p. 284), and how one of the seedlings flowered as L.-c. Phryne, a hybrid from the first-mentioned Cattleya. Another which subsequently bloomed was believed to be L.-c. Ophir, a hybrid from C. Dowiana aurea. We have recently seen the batch of seedlings, some of which show clearly the Warscewiczii and others the Dowiana habit, and one which was in flower was clearly a richly-coloured form of L.-c. Ophir, having deep yellow sepals and petals, and traces of the rich Dowiana colour and markings in the lip. It is now clear that both hybrids have appeared out of the same cross, and we hope to be able to report further next year when other seedlings bloom.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Victoria Street, Westminster, on the 10th and 31st, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold a meeting at the Coal Exchange, Manchester, on December 19th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

Paphiopedilum Fairrieanum, since its re-introduction, has become very common in cultivation. Messrs. James Cypher & Sons, Cheltenham, have many thousands of plants, and are said to have hopes of flowering an albino form before all are proved.

In the list of Birthday Honours, issued on the occasion of His Majesty's birthday, appears the name of Mr. Jeremiah Colman, Gatton Park, Reigate, one of our most enthusiastic Orchidists, on whom a baronetcy has been conferred. We congratulate Sir Jeremiah Colman, Bart., and hope he may enjoy the honour for many years to come.

THE ORCHID STUD-BOOK.—We have now come to the printing of the Addenda, which proved heavier than anticipated, and hope that in a very few weeks we shall have something definite to report.

ORCHID PORTRAITS.

AMBLOSTOMA TRIDACTYLUM.—*Orchis*, i. pp. 83, 84, f. 38.

ARACHNANTHE ROHANIANA.—*Garden*, 1907, ii. p. 531, with fig.

BULBOPHYLLUM MEDUSÆ.—*Orchis*, i. p. 80, t. 11.

CATTLEYA × FULVESCENS, WESTONBIRT var.—*Gard. Mag.*, 1907, pp. 802, 804, with fig.

CATTLEYA × IRIS.—*Journ. Hort.*, 1907, ii. p. 457, with fig.; Orchis, i. 74, t. 10.

CATTLEYA WARSCEWICZII (specimen plant).—*Gard. Chron.*, 1907, ii. p. 315, with suppl. fig.

CŒLOGYNE LAWRENCEANA, Rolfe.—*Bot. Mag.*, t. 8164.

CYMBIDIUM INSIGNE, Rolfe.—*Rev. Hort.*, 1907, p. 495, fig. 166, and plate.

CYPRIPEDIUM × ASHWORTHIÆ.—*Journ. Hort.*, 1907, ii, p. 481, with fig.

CYPRIPEDIUM × HANNIBAL.—*Gard. Mag.*, 1907, pp. 844, 845, with fig.

CYPRIPEDIUM × JAMES H. VEITCH.—*Journ. Hort.*, 1907, ii. p. 433, with fig.

DENDROBIUM PHALÆNOPSIS.—*Orchis*, i. p. 85, fig. 39.

LÆLIO-CATTLEYA EPICASTA, THE PREMIER.—*Gard. Mag.*, 1907, p. 824, with fig.

ORCHIS FOLIOSA.—*Gard. Mag.*, 1907, p. 709, with fig.

PAPHIOPEDILUM GLAUCOPHYLLUM, J. J. Sm.—*Orchis*, i. p. 89, t. 12.

PHALÆNOPSIS LINDENI, Loher.—*Orchis*, i. pp. 82, 83, fig. 37.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used) Subjects of special interest will be dealt with in the body of the work*].

G. H. H. (1) These plants which persistently produce aerial roots do so for the purpose of feeding upon the moisture and gases in the atmosphere, and we should not make any special attempts to cover them up. (2) We know that it is asserted that Orchids can be grown in ordinary rooms, but we should say that it can only be attempted with success when a window case is provided. Light, shade, moisture and ventilation are essential wherever they are grown.

E. A. Cœlogyne fuliginosa.

G. H. S. Catasetum Gnomus.

I. B. Warrea tricolor.

R. N. H. Odontoglossum mirandum.

W. S. Cirrhopetalum refractum.

J. W. P. Odontoglossum Hunnewellianum

H. G. A. Many thanks. We shall be pleased to utilise it next month.

Photographs received with thanks. G. L. H, G. W., J. B., O. N. W.

Catalogue received. Mexican Orchids, Juan Balme, Mexico City.

We have received another of the useful little "One and All" Garden Books, edited by Edward Owen Greening, the subject being Climbers, by T. W. Sanders, F.L.S., F.R.H.S. London: Agricultural and Horticultural Association. Price one penny.

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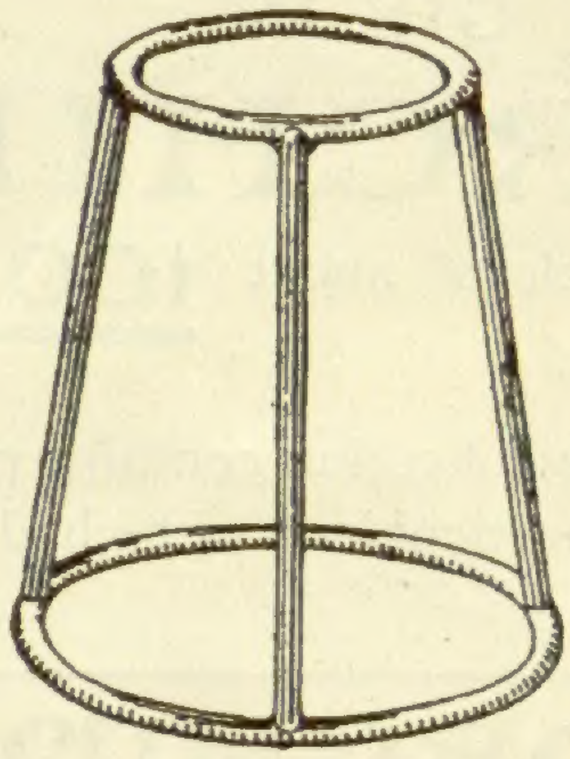

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